2025 Southeastern Residency Conference

APRIL 23 • WEDNESDAY

PINNED
6:00pm – 9:00pm

Early Check-In

Creature Comforts Brewery (271 W Hancock Ave, Athens, GA 30601)

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) F Informatics (INF) 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 24 • THURSDAY

PINNED 8:00am – 8:10am	**Welcome** *Presenters: Emily Harman*	Ballroom EF
PINNED 8:10am – 9:00am	**Keynote Address** *Presenters: Sonia Thomas*	Ballroom EF

9:10am – 9:25am

A **Impact of a Pharmacist Daily Medication Review on the Rates of Intravenous to Oral Conversions and Renal Dose Adjustments** Olympia 1

Moderators: Don Tyson
Presenters: Johny Nguyen
Evaluators: KIMM FREEMAN

Title: Impact of a Pharmacist Daily Medication Review on the Rates of Intravenous to Oral Conversions and Renal Dose Adjustments

Authors: Johny Nguyen and Lisa Gibbs

Objective/Self Assessment: Will be included in the presentation

Background/Purpose: A hospitalized patient's clinical status may fluctuate during their admission, requiring monitoring of medications for potential renal dose adjustments or transitions from intravenous (IV) to oral (PO) routes of administration. Pharmacist led IV to PO and renal dose adjustment protocols have been created at our institution but are not utilized on a consistent basis. Our pharmacy practice model consists of pharmacists following service lines within our institution (e.g., cardiology, psychiatry, internal medicine). However, patients who are covered by hospitalists do not have a dedicated pharmacist.
Preliminary data was collected in September and October of 2024 to assess the number of eligible IV orders for conversion using our existing protocol as well as the need for an expanded renal dose adjustment protocol beyond antimicrobials. This data showed an opportunity for improvement in the utilization of our protocols as well as cost-savings for our institution. Additionally, an adjustment was made to the renal adjustment protocol to include famotidine and gabapentin based on preliminary data. This project aims to evaluate the impact of utilizing our institution's renal dose and IV to PO protocols within a newly implemented decentralized floor-based pharmacist model.

Methodology: This study is a prospective analysis that was conducted during a 4-week span in February and March 2025. All adult patients admitted to medical or telemetry monitored floors at Self Regional Healthcare were included. A pharmacist was stationed on each floor for daily monitoring of patients' medication therapy, including renal dose adjustments and IV to PO opportunities. Patients receiving medications included in our protocols were flagged for potential adjustment using our institution's electronic health record software functionality. Patients were also assessed for medication adjustments outside of pharmacy approved protocols. The primary outcome of this study was the number of IV to PO or renal adjustment interventions made per protocol. Secondary outcomes include number of IV to PO or renal dose adjustment interventions made outside of protocol via recommendation to provider, provider acceptance rates, and IV to PO cost savings.
Results:

Between February 24th, 2025 – March 26th, 2025, 1046 patients were admitted to medical and telemetry-monitored floors. During this period, 37 IV to PO transitions occurred and 68 medications were renally dosed adjusted. Of the 68 medications that were renally dose adjusted, 62 were adjusted per protocol and 6 outside of protocol. Similarly, 34 medications were transitioned to PO per protocol while 3 were outside of protocol. Provider acceptance was 100% for enoxaparin, sitagliptin, and rosuvastatin renal dose adjustment recommendations but 0% for pravastatin. Both folic acid and thiamine transition to PO therapy achieved a 100% provider acceptance rate. Total cost savings from IV to PO transitions was $1,135.44, with the greatest savings seen with levothyroxine, at $737.

Conclusion: Ultimately, having a pharmacist located on the floors to perform renal dose adjustments and IV to PO transitions improved patient care and reduced healthcare-associated costs.

global: Y

9:10am – 9:25am B **Assessing Academic Detailing on Pharmacogenomic Utilization in the Primary Care and Menth Health Settings** Athena C

Moderators: Alexander Tunnell
Presenters: Jenna Brophy
Evaluators: Amanda Moyer

Title: Assessing Academic Detailing on Pharmacogenomic Utilization in the Primary Care and Menth Health Settings

Authors: Jenna K. Brophy, Justin Davis
James H. Quillen VA Medical Center (JHQVAMC) PGY1– Mountain Home, TN

Background/Purpose: Pharmacogenomics is the study of how interindividual variations in genes can influence the response to medications. Pharmacogenomic (PGx) testing is a clinical tool to improve the safety and efficacy of medication prescribing. The Food and Drug Administration (FDA) currently has 397 medications with genomic testing discussed in their package insert, 58 medications with data supporting pharmacogenomic associations, 20 with potential pharmacogenomic impact on safety and response, and 40 that may have pharmacogenomic impact on kinetics. A 2019 cross-sectional study of 7.7 million veterans across VHA determined that roughly 55% of patients were prescribed at least one actionable, level A medication informed by PGx testing. Despite published guidance to facilitate implementation of pharmacogenomic information, it can take as many as 17 years for research to be incorporated into clinical practice. Surveys of schools and colleges of medicine in the United States show efforts in recent years to increase the incorporation of pharmacogenomics within their curriculum; however, the depth and extent of education varies, and most respondents believe that physicians and other healthcare professionals do not possess an appropriate level of knowledge in this area. Academic detailing (AD) is an outreach intervention that delivers non-biased education to bridge the gap between provider knowledge, prescribing practices, and evidence-based, recommended clinical guidance. In a clinical trial assessing Technology Enabled Academic Detailing (TEAD), it was perceived as effective in terms of content delivery as traditional AD interventions (as determined by end-user feedback); however, there is limited information whether TEAD is as effective as traditional AD in promoting change in clinical practice. This quality improvement initiative aims to assess the receptiveness and impact of academic detailing on pharmacogenomic utilization in the primary care and mental health settings.

Methodology: This is a prospective cohort study that enrolled healthcare providers in the primary care and mental health settings at the James H Quillen VA Medical Center between April 2024 and December 2024. All providers were enrolled after delivery of service-level educational outreach on the availability of PGx testing. Written education was disseminated quarterly to provide updates and facilitate implementation of pharmacogenomics within these respective practice areas. During the study period, three attempts were made to offer individualized academic detailing (AD) sessions to all providers. Options for in-person and TEAD were made available. Providers could self-schedule through a calendar link or contact the academic detailer if alternative scheduling options were required. The primary outcome was to compare the utilization of pharmacogenomics between AD-exposed v. non-exposed providers. Secondary endpoints aimed to evaluate differences in acceptance of detailing between services (mental health v. primary care) and providers (physician vs. non-physician provider). A survey was utilized to identify barriers associated with academic detailing and PGx implementation.

Results: In progress

Conclusions: In progress

global: Y

9:10am – 9:25am B **Impact of Virtually Based, Pharmacist Initiated Guideline Directed Medical Therapy (GDMT) for Heart Failure with Preserved Ejection Fraction (HFpEF)** Athena D

Moderators: Brandi Dahl
Presenters: Samantha Sharpe
Evaluators: Naomi Yates

Title: Impact of Virtually Based, Pharmacist Initiated Guideline Directed Medical Therapy (GDMT) for Heart Failure with Preserved Ejection Fraction (HFpEF)

Authors: Samantha M. Sharpe, Jon E. Folstad, Allison E. Strain, Meghan E. Mark, Anita A. Kelkar
Salisbury Veterans Affairs Health Care System

Background: Heart failure (HF) is a complex clinical syndrome that is linked to significant morbidity and mortality in the United States. Heart failure is classified according to left ventricular ejection fraction (LVEF). In heart failure with preserved ejection fraction (HFpEF), the main goals of therapy are to reduce HF symptoms, increase functional capacity of the patient, and reduce hospital admissions due to HF exacerbation. Two of the GDMT classes that have shown benefit in decreasing hospitalizations due to HF and potentially reduced mortality in HFpEF – mineralocorticoid receptor antagonists (MRAs) and sodium-glucose transport 2 inhibitors (SGLT2is) – are the focus of this quality improvement project due to their ease of use and relatively short follow-up.
At the Salisbury VA Health Care System (SVAHCS), primary care clinical pharmacy practitioners (CPPs) have begun to manage low acuity heart failure patients on a more consistent basis in recent years. A quick data query through the SVAHCS Academic Detailing HF dashboard revealed over 100 patients currently receiving virtual care at the SVAHCS (Salisbury location) with a diagnosis of HFpEF who are not receiving an MRA or an SGLT2i for which they are indicated.
Methods: This quality improvement project will utilize the SVAHCS Academic Detailing HF dashboard to identify patients diagnosed with HFpEF who are not receiving an MRA and/or an SGLT2i. Those identified who meet the inclusion/exclusion criteria will be contacted and a virtual visit will be conducted by the clinical pharmacist, including an assessment and plan for initiation of the aforementioned GDMT for HFpEF. The clinical pharmacist will conduct a follow-up telephone visit within 1-2 weeks of initiating the medication, and a follow-up basic metabolic panel (BMP) will be obtained as well as an assessment of tolerability made by the clinical pharmacist. The primary objective is to evaluate the proportion of patients with HFpEF in whom GDMT is implemented by the clinical pharmacist out of those who are candidates for GDMT initiation. **The secondary objective is to** evaluate the tolerability of **MRA and/or SGLT2i therapy in patients with HFpEF.**
Results: In progress.
Conclusion: In progress.

global: Y

9:10am – 9:25am R **Auto-verification Resulting in Medication Errors in the Emergency Department** Athena G

Moderators: Spencer Roper
Presenters: Courtney Ellison
Evaluators: Vince Buttrick

TITLE: Auto-verification Resulting in Medication Errors in the Emergency Department

AUTHORS: Courtney Ellison, Nichole Moore, Rachel Rossi, Christopher Whitman, Rachel Foster, Amanda Williams, and Maria Berec

BACKGROUND: Auto-verification is a process commonly utilized by hospitals to increase workflow. The Joint Commission and the American Society of Health-System Pharmacists (ASHP) provide standards to incorporate into auto-verification software, such as “do not verify” criteria, to ensure safety. Available literature has demonstrated the proficiency of auto-verification; however, limited studies have evaluated its safety. This study aimed to assess current medications auto-verified in a health system’s emergency department for the rate of errors and compare them to medications verified by a pharmacist while observing the differences in time of verification and time of administration of first doses.

METHODS: A multi-site retrospective cohort study of auto-verified adult and pediatric medication orders from July 2023 through September 2023 was conducted. Data for antibiotic and anticoagulant medication orders auto-verified in patients ≥ 19 years old and auto-verified pediatric (≤ 18 years old) orders were collected and compared to orders verified by pharmacists. Orders entered by pharmacists were excluded from the study. Medication order numbers were placed in a random list generator to identify comparator groups and evaluated based on medication, dose, frequency, indication, and if duplicates were present. Other data collected included patient demographics, location, time of ordering, time to verification, and time to administration. The primary endpoint was the rate of medication errors, which were classified based on the type of error. Secondary endpoints included near misses, average ordering, administration, and verification time. Fisher's exact test and relative risk ratios used to analyze the primary endpoint.

RESULTS: A total of 1,003 medication orders were retrospectively evaluated between July 2023 through September 2023. Comparator groups consisted of 251 samples per group: adult auto-verified antibiotics and anticoagulants, adult pharmacy-verified antibiotics and anticoagulants, and pediatric auto-verified medications, with 250 samples in the pediatric pharmacy-verified medications group. Thirty-two medication errors were identified among the adult auto-verified group, and 10 in the adult pharmacy-verified group. The rate of medication errors among the pediatric orders auto-verified and pharmacy-verified orders were 14 and 4, respectively. Incorrect dosing accounted for most errors identified among the auto-verified adult (50%; 16/32) and pediatric orders (79%; 11/14). For the primary endpoint there was a relative risk of 3.3 (95% CI 1.66 – 6.55; p=0.0003) for the adult population and a relative risk of 3.48 (95% CI 1.16 – 10.44; p=0.028) for the pediatric population. The average times to order verification were 13.2 minutes for adults and 6.9 minutes for pediatrics. The average times to administration for auto-verified orders were 29.1 minutes in adults and 18.6 minutes in pediatrics. Of all the medication errors identified, 21.7% (10/46) were considered near misses.

CONCLUSION: Auto-verification can provide proficient patient care in fast-paced settings where accuracy is vital. Periodic evaluation of this process is essential to evaluate the safety of present standards. Among medications auto-verified in the emergency department, there was a statistically significant difference compared to pharmacy-verified medications in adult and pediatric patients. Limitations identified were a small percentage of patients’ renal functions were evaluated among auto-verified orders (49% adults and 18% pediatrics), and most orders were one-time doses. The randomization process was considered a limitation because medications in the auto-verified groups were inconsistent with pharmacy-verified groups in terms of specific drugs. The results of this study will be utilized for quality improvement purposes for auto-verification criteria and safety evaluation of other

drug classes commonly auto-verified.

global: Y

9:10am – 9:25am R **Deep vein thrombosis (DVT) prophylaxis agent selection in patients with acute kidney injury**
Moderators: Kayla Lawlor
Presenters: Jacob Powell
Evaluators: brian meister
Athena I

Title: Deep vein thrombosis (DVT) prophylaxis agent selection in patients with acute kidney injury

Authors: Jacob Powell, Lauren Chambers, Joseph Davis

Objective: To assess differences in bleed risk and clinical outcomes between enoxaparin and unfractionated heparin for the use of DVT prophylaxis in the setting of acute kidney injury

Background: Venous thromboembolisms (VTE) are a significant contributor to morbidity and mortality in hospitalized patients. The American Society of Hematology (ASH) and American College of Chest Physicians recommend pharmacological prophylaxis for acutely or critically ill patients. Reduced kidney function can impair anticoagulant elimination, increasing the risk of bleeding. However, thrombosis and bleeding are both common in patients with acute kidney injury (AKI). Proper dosing is critical to avoid drug accumulation. Enoxaparin is prescribed for DVT prophylaxis at 40 mg daily, while unfractionated heparin (UFH) is given at 5,000 mg 2-3 times daily. In patients with reduced kidney function (creatinine clearance <30 ml/min), enoxaparin is reduced to 30 mg daily. UFH does not require renal dose adjustments. There is insufficient data to lead one to favor enoxaparin over UFH in this patient population. The objective of this research project is to assess differences in bleed risk and clinical outcomes between enoxaparin and UFH for the use of DVT prophylaxis in the setting of AKI. Results from this study will help to guide providers in agent selection for DVT prophylaxis in patients with AKI.

Methods: This study was a single center, retrospective, observational review conducted at ECU Health Medical Center (ECHMC). This study included patients with a creatinine clearance (CrCl) <30 ml/min who had developed an AKI, defined by an increase in serum creatinine (SCr) by ≥0.3 mg/dL, within 48 hours of admission. Patients included received DVT prophylaxis with enoxaparin or UFH for at least 48 hours after admission and during AKI. Patients were excluded if they received both agents, were admitted to a trauma, surgery, or orthopedic service, or had end stage kidney disease (ESKD) receiving dialysis within 30 days of admission. Patients weighing <45kg were likewise excluded from this study. The primary outcome in this study was the incidence of major bleeding between each medication within 30 days of admission. Secondary outcomes included in-hospital mortality, length of stay, daily cost of medications, incidence of minor bleeding, and development of thrombus within 30 days of admission.

Results: A total of 130 patients were included for analysis, with 36 (28%) receiving enoxaparin and 94 (72%) receiving UFH. Baseline characteristics were largely similar between groups, with some notable exceptions. Patients in the UFH group had a significantly higher median weight (77.1 kg vs. 65.6 kg; p=0.0003) and body mass index (27.3 kg/m² vs. 22.2 kg/m²; p=0.0006) compared to those receiving enoxaparin. Additionally, patients receiving UFH had higher median SCr levels on admission (p<0.0001), higher peak SCr during AKI (p<0.0001), and lower median CrCl during AKI (p=0.0005). There was no statistically significant difference in the primary outcome of major bleeding between enoxaparin and UFH groups (5.6% vs. 2.1%; RR 2.611, 95% CI 0.3819–17.854; p=0.3067). Similarly, there were no significant differences in secondary outcomes, including in-hospital mortality, length of stay, incidence of minor bleeding, or thrombus formation within 30 days of admission. However, UFH was associated with a significantly higher median drug cost per day compared to enoxaparin (p<0.001).

Conclusion: This study found no increased risk of bleeding with enoxaparin in patients with AKI. While underpowered to detect statistical significance, this study provides additional data on enoxaparin use in this patient population without increased risk of safety concerns. Larger studies are needed to confirm these findings.

Contact Information: Jacob.Powell@ecuhealth.org

global: Y

9:10am – 9:25am R **Simplified Phenobarbital Versus Benzodiazepine Driven CIWA-Ar Protocol for Alcohol Withdrawal Syndrome** Athena H

Moderators: Jenna Cox
Presenters: Hyo Min Kim
Evaluators: Christen Freeman

Title: Simplified Phenobarbital Versus Benzodiazepine Driven CIWA-Ar Protocol for Alcohol Withdrawal Syndrome

Authors: Hyo Min Kim, Julie Willmon, Houda Dardari

Background/Purpose: Treatment for alcohol withdrawal syndrome (AWS) targets disrupted pathways of GABA inhibition and NMDA receptor upregulation.[1] According to the American Society of Addiction Medicine, benzodiazepines are first-line treatment for AWS. However, prolonged exposure to ethanol will result in tolerance to benzodiazepines.[2] While benzodiazepines only work on GABA, phenobarbital offers a dual mechanism of action involving glutamate and GABA along with longer half-life for easier tapering.[3] Literature suggests positive clinical outcomes from phenobarbital in AWS, but the ideal dosing is unknown.[4] This study compares hospital length of stay (LOS) between a simplified phenobarbital regimen and the traditional benzodiazepine-driven CIWA protocol in patients admitted for AWS. Secondary outcomes include ICU LOS, need for adjunctive therapy, and incidence of adverse events.

Methodology: This retrospective study analyzed patients admitted for AWS at AdventHealth Winter Park from November 1, 2022, to January 31, 2025. Patients received either a simplified phenobarbital dosing strategy or a traditional benzodiazepine-driven CIWA protocol. Exclusion criteria included age <18 years, pregnancy, discharge against medical advice within 24 hours, home phenobarbital use, or a history of porphyria. The phenobarbital regimen involved an initial IV loading dose of phenobarbital 5–8 mg/kg based on ideal body weight (IBW), or adjusted body weight if >130% IBW, administered as an infusion over 10–30 minutes in 100 mL normal saline. Additional doses of phenobarbital 65–130 mg IV push were given at physician discretion based on withdrawal symptoms.

global: Y

9:10am – 9:25am | **Combating Resistant Pathogens: Exploring the Efficacy of Eravacycline Utilization in Multidrug-Resistant Infections** Athena A

Moderators: Caren Azurin
Presenters: Kiara Patino
Evaluators: Caroline Jozefczyk

Title: Combating Resistant Pathogens: Exploring the Efficacy of Eravacycline Utilization in Multidrug-Resistant Infections

Authors' names: Kiara Patino, Ryan Vathy, Ben Albrecht, Sujit Suchindran, Sarah B. Green

Background/Purpose: Eravacycline, FDA-approved for complicated intra-abdominal infections, is increasingly used off-label for multidrug-resistant (MDR) infections, including carbapenem-resistant Enterobacterales (CRE), *Stenotrophomonas maltophilia* and carbapenem-resistant *Acinetobacter baumannii* (CRAB). Eravacycline has been utilized at Emory Healthcare (EHC) hospitals, an academically affiliated healthcare system based in Atlanta, GA, for these MDR infections with limited treatment options. The objective of this study is to evaluate the efficacy and safety of eravacycline utilization for off label treatment of infections caused by MDR organisms at EHC hospitals.

Methods: This study is an institutional review board approved, multi-center, retrospective quasi-experimental analysis. Adult patients (≥ 18 years of age) who received eravacycline at an EHC hospital from October 1st, 2022, to June 30th, 2024, for the treatment of infections due to vancomycin-resistant Enterococcus (VRE), CRAB, CRE, MDR Enterobacterales, or *S. maltophilia* were included in this study. Patients who received < 72 hours of treatment with eravacycline were excluded. The primary endpoint was a composite of treatment failure defined as inpatient mortality during the index admission and/or 30-day microbiologic recurrence. Secondary outcomes included safety endpoints such as antibiotic associated adverse effects, infusion site reactions, and *Clostridioides difficile* infection diagnosis within 90 days. Descriptive statistics were used to evaluate the primary and secondary outcomes, and a multivariate regression analysis was used to assess risk factors for treatment failure with eravacycline.

Results: 48 patients were included in this study. The patients' median age was 57.6 years, with 60.4% female and 54.2% Black. Eravacycline was primarily used for VRE (31.3%), *S. maltophilia* (29.2%), and CRE (20.8%) infections. The median treatment duration with eravacycline was 12.6 days. Treatment failure occurred in 39.6% of patients, while 60.4% of patient experienced survival without recurrence. Adverse events were rare (4.2%). No significant factors for treatment failure were identified in multivariate analysis.

Conclusions: Eravacycline is a well-tolerated option for treating MDR infections. Given its favorable safety profile, eravacycline is a promising alternative for infections with limited treatment options.

Contact email: kiara.patino@emoryhealthcare.org

global: Y

9:10am – 9:25am | **Monotherapy versus Combination Therapy in the Treatment of Enterococcus faecalis Bloodstream Infections** Athena B

Moderators: Andi Ray
Presenters: Amber Fraley
Evaluators: Kyle Starling

Title: Monotherapy versus Combination Therapy in the Treatment of *Enterococcus faecalis* Bloodstream Infections

Authors: Amber D. Fraley, Daniel Anderson, Joshua Eudy

Objective: To evaluate the safety and efficacy of monotherapy and combination therapy for *E. faecalis* bloodstream infections.

Self Assessment Question: True or False: At this time, there is a need for more outcomes data for both monotherapy and combination therapy for E. faecalis BSI in the absence of IE.

Background: *Enterococci* are gram-positive facultative anaerobic organisms typically found as normal intestinal flora. The two most common species that cause infections in humans are *E. faecalis* and *E. faecium*. Historically, combination antibiotic therapy has been the standard of care in treating infective endocarditis (IE) caused by *E. faecalis*. However, practice is occasionally extrapolated to *E. faecalis* bloodstream infections (BSI) without IE. With a lack of outcomes data to support use, combination therapy is a dogmatic practice based on *in vitro* data from the 1950s involving two antibiotics seldom used for *E. faecalis* infections, penicillin and streptomycin. Therefore, this study seeks to assess the safety and efficacy of monotherapy compared to combination therapy for *E. faecalis* BSI with or without IE.

Methods: This single-center, IRB-approved, propensity-matched, retrospective cohort study, conducted at Wellstar MCG Health, reviewed all adult patients hospitalized between January 1, 2017 and September 30, 2024 with at least one blood culture positive for E. faecalis. Patients were excluded from the study if they expired within 72 hours of index culture, had polymicrobial BSI, did not receive antibiotic treatment, and/or had a prior diagnosis of *E. faecalis* within the previous 60 days. The primary outcome was a composite of 30-day mortality, 60-day hospital readmission, and/or 60-day recurrence. Secondary outcomes were each individual component of the composite outcome, time to blood culture clearance, duration of bacteremia, length of hospital stay, and adverse events. Outcomes were evaluated using various statistical methods, including chi-squared and Mann-Whitney U, as appropriate. Demographics were evaluated using descriptive statistics.

Results: Of the 139 patients who met the inclusion criteria, there was no statistically significant difference in the primary composite outcome for monotherapy compared to combination therapy (27.1% vs 27.8%; p=0.93), hospital length of stay (12.8 [8.1-24.8] vs 15 [8.6-23]; p=0.92), or adverse reactions (2.5% vs 5.6%; p=0.96).

Conclusion: Both monotherapy and combination therapy yielded similar outcomes for the primary composite and adverse reactions, however, the study was not adequately powered to detect a difference. Therefore, at this time, larger studies are warranted comparing monotherapy and combination therapy for *E. faecalis* BSI with or without IE.

Contact Information: amber.fraley@wellstar.org

global: Y

9:10am – 9:25am L **Comparative Efficacy of Ertapenem in Patients with or without Hypoalbuminemia** Parthenon 2

Moderators: Criag MacDonald

Presenters: Jakob Barton

Evaluators: Che Jordan

Title: Comparative Efficacy of Ertapenem in Patients with or without Hypoalbuminemia

Authors: Jakob Barton PharmD, Julia Coluccio PharmD, BCCCP, Kristin Fernandes PharmD, BCPS, Steven Parker PharmD

Background: Ertapenem, a carbapenem antimicrobial, is indicated for a wide range of bacterial infections including blood stream infections, complicated urinary tract infections, community acquired pneumonia, and complicated intra-abdominal infections. It has a broad spectrum of activity against multiple gram-positive organisms and gram-negative organisms including those that produce extended spectrum beta-lactamases (ESBL). According to the 2024 Update to the IDSA Guidance on the Treatment of Antimicrobial Resistant Gram-Negative Infections, ertapenem is not the preferred carbapenem in critically ill patients or patients with hypoalbuminemia (defined as a serum albumin level of ≤2.5 g/dL). Pharmacokinetic studies have demonstrated a difference in drug concentrations among patients with normal albumin compared to those with hypoalbuminemia as ertapenem is highly protein bound. Hypoalbuminemia can lead to fewer available protein binding sites and increased free concentration of ertapenem, which may reduce the half-life of the drug and prevent it from achieving optimal minimum inhibitory concentration (MIC) targets. The purpose of this study is to evaluate if a difference is present in the rate of clinical cure with ertapenem therapy in patients with or without hypoalbuminemia.

Methodology: This was a retrospective chart review of patients admitted to Piedmont Atlanta Hospital from August 2022 to August 2024 who received ertapenem for at least 2 days and had a documented albumin level within 48 hours prior to ertapenem administration. Hypoalbuminemia was defined in this study as a serum albumin level prior to ertapenem administration of ≤2.9 g/dL. Patients were excluded if they were pregnant or if ertapenem was being used in combination with cefazolin for methicillin-susceptible *Staphylococcus aureus* bacteremia. The primary endpoint was the clinical cure rate within 10 days of ertapenem therapy defined as resolution of fever and leukocytosis. Secondary endpoints included 90-day readmission rates for infectious reasons, total duration of antimicrobial therapy, survival by hospital discharge and hospital length of stay. Statistical analysis was completed using an independent t-test for continuous data and Chi squared test for categorical data. In order to achieve an expected 85% cure rate it was determined that 92 patients were needed to reach 80% power with an alpha of 0.05. A p-value of <0.05 was statistically significant.

Results: A total of 154 patients were included in the study with 60 patients in the hypoalbuminemia group and 94 in the non-hypoalbuminemia group. In patients with hypoalbuminemia, 60% achieved clinical cure by day 10 compared to 70.2% of patients without hypoalbuminemia (p=0.1919). There was no difference in rates of readmission between the groups with 10% of patients in the hypoalbuminemia group being readmitted for an infectious reason compared to 21.3% in the patients without hypoalbuminemia (p=0.0685). No difference was found in rates of survival at discharge in the hypoalbuminemia group compared to the non-hypoalbuminemia group (82% vs 86%, p=0.4524) Ertapenem duration of therapy in the study was longer in the hypoalbuminemia group compared to the non-hypoalbuminemia group (8.9 days vs 6.6 days, p = 0.0109). Additionally, hospital length of stay was prolonged in the hypoalbuminemia group compared to the non-hypoalbuminemia group (35 days vs 16 days, p = 0.0002)

Conclusions: This study found no statistically significant difference in clinical cure rates at 10 days in patients with hypoalbuminemia compared to patients without hypoalbuminemia. Patients without hypoalbuminemia had significantly shorter lengths of stay in the hospital and shorter durations of therapy with ertapenem. Study limitations include retrospective design and a different of hypoalbuminemia than what is outlined in the guidance statement from IDSA. Prospective trials with a larger sample size are warranted in this population.

global: Y

9:10am – 9:25am L **Evaluating Anti-Hypertensive Management Amongst African American Patients through Inpatient and Outpatient Pharmacist Collaboration** Parthenon 1

Presenters: Lindsey Katsaros

Evaluators: Katie Coffee, Lindsay Reulbach

Title: Evaluating Anti-Hypertensive Management Amongst African American Patients through Inpatient and Outpatient Pharmacist Collaboration

Authors: Lindsey Katsaros, Nathan Batchelder, Michelle Turner, Jimmy Wyland

Background:
In 2022, Cone Health identified a health equity gap in their community revealing lower rates of hypertension control among African American patients compered to White patients. The Collaboration Among Pharmacist and Physicians to Improve Outcomes Now trial found that pharmacist-involvement in outpatient clinic visits improved blood pressure management and reduced racial and socioeconomic disparities in blood pressure control. Cone Health launched an initiative in 2023 to eliminate this health equity gap in their surrounding community. This initiative started with blood pressure screenings and ambulatory care pharmacist visits for hypertension management. The objective of this study is to assess the impact of collaborative hypertension management interventions led by pharmacists starting in the acute care setting.

Methods:
This was an IRB approved and determined exempt evaluation assessing acute care pharmacist transitions of care interventions across four community hospitals and two emergency department medical centers. Patients were included if they were at least 18-years old, African American, had a diagnosis of hypertension, on Managed-Medicaid, and presented to an acute care facility for an emergency or hospital visit within the enrollment period of April 2024-October 2024. Patients were excluded if they were pregnant, had end-stage renal disease, or were receiving hospice or palliative care. This study assessed outcomes in patients with and without a pharmacist intervention. Pharmacists were alerted of eligible patients via the electronic medical record. Pharmacist interventions were identified by documented i-vents within the electronic medical record. The interventions assessed included providing bedside education on adherence, enrolling patients in Meds-to-Beds delivery prior to hospital discharge, and referring patients to an ambulatory care pharmacist for further blood pressure management. The primary endpoint was the number of acute care visits, including hospital readmission and emergency room visits, within 90 days in patients who were reviewed and offered a pharmacist intervention compared to patients who were not reviewed by a pharmacist. Secondary objectives included the number and type of medication barriers identified and the number of patients who accepted pharmacy services, including Meds-to-Beds delivery and ambulatory care clinic referrals.

Results:
A total of 454 patients were evaluated; 30 patients were reviewed by a pharmacist, and 424 patients were not reviewed by a pharmacist. Majority of patients were female (n=272, 60%) with an average age of 48 years old. Patients with a pharmacist review had a higher average number of acute care visits within 90 days compared to patients without a pharmacist review (2.2 vs 0.57 acute care visits in 90 days, p=0.0036). Of the 30 patients with a pharmacist review, a total of 20 patients accepted a pharmacist intervention. The most common interventions were education provided by the pharmacist (n=16, 53%) and referral sent for an ambulatory care pharmacist appointment (n=15, 50%). A subgroup analysis of patients who had a pharmacist review found that patients with an ambulatory care referral, compared to patients without an ambulatory care referral, had fewer emergency department visits within 90 days (1.1 vs 2.2 visits in 90 days) and fewer re-hospitalizations within 90 days (1.3 vs 3.1 visits in 90 days).

Conclusion:
For African American patients with hypertension, this study did not find any reduction in acute care visits when an acute care pharmacists conducted a formal review of patient's hypertension management. There was a reduction in emergency department visits and re-hospitalizations seen when patients were referred to follow-up with an

ambulatory care pharmacist. The results from this study further support the efforts of ambulatory care pharmacists to help manage hypertension in the outpatient setting. Further efforts should be made to streamline the process of referring patients to a pharmacist for a post-discharge ambulatory care appointment.

global: Y

9:10am – 9:25am L **Implementation of Barcode Medication Administration in Perioperative Areas** Olympia 2

Moderators: Skyler Brown
Presenters: Trevyn Flanders
Evaluators: Kristen Keen

Implementation of Barcode Medication Administration in Perioperative Areas

Trevyn Flanders, Tanner Shields, Emily Duncan, Danielle Yates, Summer Snowden, Alan Knauth

Purpose:
Previous studies have shown that BCMA can reduce medication administration errors, as well as reduce risk of harm from those errors. In May 2024, pharmacists at Blount Memorial Hospital began verifying perioperative orders through computerized provider order entry (CPOE). CPOE orders are entered to allow for barcode medication administration (BCMA) in the perioperative areas. Prior to CPOE and BCMA in these areas, medications were removed from the automated dispensing cabinet and administered to the patient without pharmacist review. After this implementation, pharmacists now review all medication orders prior to administration in perioperative areas. Our purpose is to assess these changes and the potential impact on patient safety and pharmacist workload.

Self Assessment Question:
BCMA has the potential to improve patient safety by ensuring adherence to the "Five Rights" of medication administration
True or False

Methods:
This is an IRB-approved, retrospective, cohort analysis to assess the impact of implementing BCMA in the perioperative setting, as well as to assess the impact of a surgery-specific pharmacist at our institution. We used the data collected to compare medication scan rates, automated dispensing cabinet overrides, and total order volume before and after BCMA implementation. We also evaluated the types of interventions being documented by the surgery pharmacists after implementing BCMA. The primary objectives were to analyze the medication scan rate, cabinet override rate and total order volume before and after BCMA implementation. The secondary objective was to evaluate the types of interventions documented by surgery pharmacists.

Results:
Medication scan rates were reviewed, showing a 99% scan rate for 12,955 orders after BCMA implementation. There were 8,552 transactions reviewed for cabinet overrides, showing only 1.2% of orders were overridden. Total order volume increased by 51% after CPOE implementation in perioperative areas. Lastly, 285 interventions documented by surgery pharmacists were reviewed after implementation. Of those reviewed, 142 interventions pertained to patients in surgical areas. The most common interventions were related to ADE (adverse drug event) prevention (42%) and antibiotic related issues (22%).

Conclusion:
The data we collected on medication scan rates and cabinet overrides suggests that BCMA had a positive impact on patient safety at our institution. Furthermore, the documentation of interventions made by a dedicated surgery pharmacist suggests that we are preventing potential adverse drug events, thus improving patient safety.

global: Y

9:10am – 9:25am D **Evaluation of Maintenance-and-Reliever Therapy Utilization for Pediatric Asthma** Athena J

Moderators: Janae Townsend
Presenters: Chiara Huber
Evaluators: Tabitha Carney

Title: Evaluation of Maintenance-and-Reliever Therapy Utilization for Pediatric Asthma

Authors: Chiara Huber, Christina Cox, Katie Rasmussen, Kimberly Grubbs, Logan Miller, Heather Staples

Background: Asthma is the most common pediatric chronic condition, affecting over 4.5 million children. Prior to guideline updates, the standard approach to moderate to severe asthma in children included a short acting beta agonist (SABA) inhaler for relief of asthma symptoms, plus a separate inhaled corticosteroid (ICS) or ICS/long-acting beta agonist (LABA) inhaler for maintenance therapy. In 2019-2020, the Global Initiative for Asthma (GINA) and National Heart Lung and Blood Institute (NHLBI) asthma guidelines were updated to recommend the use of combination ICS-formoterol as both maintenance and reliever therapy (MART) as a preferred regimen in moderate to severe asthma in adults and children ≥ 5 years old. Despite new recommendations, a recent evaluation of MART use in adults found low adoption rates among eligible patients. Factors associated with MART adoptions included baseline maintenance use of ICS-formoterol, private insurance, younger patients and newer clinicians. Since limited information exists for pediatric patients, this study aims to describe MART implementation in pediatric asthma patients and identify the factors associated with MART recommendations.

Methods: This retrospective cohort study included patients aged 5-18 with asthma who were admitted to Prisma Health Children's Hospital-Midlands for an asthma exacerbation between January 1, 2022, and July 1, 2023. The primary outcome was the proportion of patients who qualified for MART and received a MART recommendation. For the purposes of this study, patients qualified for MART if they were utilizing an ICS or ICS/LABA inhaler at time of admission and had received at least one course of non-inhaled corticosteroids in the last year. Secondary outcomes included asthma readmissions within one year and an evaluation of factors that may be associated with MART recommendations. Statistical analysis will involve descriptive statistics and a multivariate regression analysis to assess the relationship between demographic data and MART therapy.

Results: 598 patients were screened for enrollment and 246 were included in the primary analysis. The median patient age was 8 years, 69.5% of patients were Black, and 63.5% of patients were on Medicaid. 102 patients qualified for MART based on study criteria, however only 4 patients (3.9%) were discharged with MART recommendations. 36 patients were readmitted for asthma within one year. Compared to those who did not qualify, patients who qualified for MART were more likely to be readmitted for asthma (21.6% vs 9.7%) and have a high risk disease state (14.7% vs 9.7%).

Conclusions: MART utilization remained very long among qualifying patients. Patients who qualified for MART had high rates of asthma readmissions and more frequently had disease states associated with higher exacerbation risk.

global: Y

9:30am – 9:45am A **Empowering Pharmacy Practice through Data Democratization** Olympia 1

Moderators: Don Tyson
Presenters: Benjamin G Edouard
Evaluators: KIMM FREEMAN

Title: Empowering Pharmacy Practice through Data Democratization

Authors: Benjamin G. Edouard, Sydney Kchao, Alyssa Billmeyer

Background: Data democratization is the process of making data accessible, comprehensible, and functional within all members of an organization. This study aims to identify and assess data utilization and the quality of data democratization within pharmaceutical services. Historically, data access and reports have been consolidated to a team of analytic specialists. However, pharmacists today may need critical information but may face challenges in finding the best way to access the right resources or information. The implementation of analytics within the healthcare setting has grown exponentially as technology evolves, but pharmacy practice still has an opportunity to grow. This study plans to test this concept within a hospital system to gauge how pharmacists stand to benefit from sifting through data more efficiently when the tools are more easily accessible. The value to the organization's front-line pharmacists will be the empowerment to make robust and impactful clinical decisions that are data-driven. When pharmacists have more access to the right data, it could result in more ideas, innovations, creative interventions, and more informed therapeutic management.

Methods: The study design focused on pre-post surveys to assess the impact on pharmacists' daily activities. The source of participants were the Emory University Hospital Midtown's clinical pharmacists as a nonrandomized control group. Staff was contacted through email with the pre-surveys attached. Clinical pharmacy specialists who work within the inpatient, oncology, or ambulatory care areas of Emory Healthcare and who have an identified need for the use of data within their work area were the inclusion criteria set in the study. Once all of the pre-surveys are collected, they will be analyzed to implement training sessions for the clinical pharmacy specialists on using SlicerDicer and other data analytics tools to obtain information that may be useful to them to make daily interventions. For the study's primary outcome, clinical pharmacists participating in the survey were sent a pre-intervention survey to measure baseline use of data and how it impacts their clinical decisions, and it will be contrasted with a post-intervention survey. The post-intervention survey reassesses the pharmacist's views on the tools and accessibility of data needs. Secondary outcomes will include reporting analytics used by pharmacists to assess changes in practice, such as the number of reports and average duration of access. These outcomes will help assess changes in attitudes, perceptions, behavior, practices, barriers, and challenges around data access that could benefit pharmacy practice. The surveys are being collected from Microsoft Forms, and then the results will be measured using Microsoft Excel spreadsheets. Data collection will also be sourced from Epic Systems at Emory University Hospital Midtown. SlicerDicer software is also within Epic; reports will be gathered from there specifically. Statistical analysis methods will include tests for reliability and validity among the surveys.

Results: Preliminary survey results included 17 responses from EUHM clinical pharmacists. The clinical areas represented in the pre-survey included, but were not limited to, cardiac critical care, hepatology, and oncology. When asked to identify specific data elements that could be reported to them and how these elements would support their daily tasks, 16 out of 17 participants identified gaps in data accessibility. Nearly 60% of the requested data access types aligned with Reporting Workbench functionality, while approximately 30% of the desired data elements corresponded with SlicerDicer capabilities. Additional results are pending and will further clarify pharmacists' data accessibility needs and whether the staff felt the intervention helped their workflow.

Conclusions: In Progress

global: Y

9:30am – 9:45am B **Direct oral anticoagulants and potential inconsistencies with recommended dosing in atrial fibrillation** Athena C

Moderators: Alexander Tunnell
Presenters: Kelsey Maynard
Evaluators: Amanda Moyer

Title: Direct oral anticoagulants and potential inconsistencies with recommended dosing in atrial fibrillation

Authors: Kelsey Maynard, Melissa Johnson, David Cruse, Cody Veal, Chelsea Keedy

Background: Direct oral anticoagulants are commonly recommended in atrial fibrillation patients to prevent thromboembolism. Anticoagulant dosing not aligned with approved labeling has been associated with increased risk of cardiac hospitalization, stroke, all-cause mortality, and bleeding. Previous studies have reported 20 to 32 percent of atrial fibrillation patients have their direct oral anticoagulants dosed outside labeling recommendations. The objectives of this study were to determine the rate of direct oral anticoagulant dosing that is outside of approved labeling for patients with atrial fibrillation at three outpatient primary care clinics of a community health system and determine the characteristics of those inappropriately dosed.

Methods: This was a retrospective, cross-sectional analysis evaluating adult patients diagnosed with atrial fibrillation treated with direct oral anticoagulants from January 1st, 2023 to December 31st, 2023. Patients were excluded if they were less than 18 years old or greater than 89 years old, pregnant or experienced childbirth within study period, or if they had been previously diagnosed with a clotting disorder. Patients were also excluded if they were treated for venous thromboembolism, hip/knee replacement, left ventricular thrombus or heparin induced thrombocytopenia during the study period. The primary outcome is to determine the percentage of atrial fibrillation patients with direct oral anticoagulant dosing that is not consistent with the Food and Drug Administration approved labeling. Secondary analyses were completed to determine the percentage of atrial fibrillation patients with particular clinical or demographic characteristics who were inappropriately dosed. Characteristics evaluated included age, sex, race, drug name, drug dose, drug dosing instructions, body weight, serum creatinine, concomitant CYP450/PGP drug-drug interactions, concomitant medications, hemodialysis status, primary care office location, prescriber, social deprivation index, CHA2DS2-VASc, HAS-BLED, and history of bleeding.

Results: Two hundred and twenty-two patients met inclusion criteria for analysis. Thirty-six of these patients had their direct oral anticoagulant inappropriately dosed (16.2%). Of the inappropriately dosed patients, the average age was 81 years old, 20 patients were female (55.6%), 29 were Caucasian (80.6%), 2 patients were on dialysis (5.6%), and 11 patients had a history of bleeding (30.6%). Twenty-five patients were prescribed apixaban (69.4%) and 11 patients were prescribed rivaroxaban (30.6%). Ten of these patients (27.8%) had their direct oral anticoagulant prescribed by their primary care provider, the average CHA2DS2-VASc score was 3.5, and the average HAS-BLED score was 2.1. Eight patients (22.2%) were also prescribed a CYP450/PGP medication and 16 patients (44.4%) were also prescribed a nonsteroidal inflammatory drug, glucocorticoid, antiplatelet, or selective serotonin reuptake inhibitor. Nineteen of the inappropriately dosed patients (52.8%) had their direct oral anticoagulant under dosed, nine patients (25%) did not have their direct oral anticoagulant adjusted for their creatinine clearance appropriately, six patients (16.7%) met two of the three dose adjustment criteria for apixaban dose adjustment, and two patients (5.6%) were on dialysis and were not greater than 80 years old or less than 60 kg.

Conclusion: The majority of the atrial fibrillation patients in three of our community health system’s outpatient primary care clinics have their direct oral anticoagulants dosed appropriately per the Food and Drug

Administration’s approved dosing. The atrial fibrillation patients in our primary care clinics at highest risk of having their direct oral anticoagulants inappropriately dosed are patients who are elderly, female, Caucasian, and prescribed apixaban. These patients are more often under dosed.

global: Y

9:30am – 9:45am B **Multidisciplinary approach to caring for women with gestational diabetes: Impact of clinical pharmacy visits on glycemic control and perinatal outcomes** Athena D

Moderators: Brandi Dahl
Presenters: Teri Templin
Evaluators: Naomi Yates

Title: Multidisciplinary approach to caring for women with gestational diabetes: Impact of clinical pharmacy visits on glycemic control and perinatal outcomes

Authors: Teri Templin, Brianna Novak, Lindsay M. Green, Jonathan Hughes, Joel C. Marrs

Background:
Gestational diabetes mellitus (GDM) is a complex condition that requires frequent blood sugar monitoring and tighter glycemic control compared with a nonpregnant patient with diabetes. GDM can lead to many adverse outcomes for the mother and baby if left unmanaged. Additionally, it can leave many pregnant mothers feeling overwhelmed and confused by the abrupt changes needed in their lifestyle and medical care. Ascension Medical Partners Saint Louise Family Medicine Center has clinical pharmacists integrated into direct patient care services for co-management of long term disease states. Though clinical pharmacists play a huge role in co-managing patients with type 1 and type 2 diabetes, there is little evidence to determine the impact of clinical pharmacy services on patients with gestational diabetes. The primary objective of this study is to identify if incorporating a clinical pharmacist into the antenatal care of a patient with gestational diabetes will result in improved glycemic control and, thus, decrease the risk of adverse perinatal outcomes. The secondary objective seeks to identify if clinical pharmacy co-management improves the patient's understanding of gestational diabetes and overall satisfaction with their care. The potential impact of this study could highlight the importance of a multidisciplinary approach as standard of care in women with gestational diabetes.

Methods:
This quality improvement project evaluates the introduction of clinical pharmacists into the routine care of obstetric patients diagnosed with gestational diabetes at the Ascension Medical Partners Saint Louise Family Medicine Center. The intervention group will be recruited from our current pregnant population from October 1, 2024 to March 30, 2025. Eligible participants will be determined based on the results of the oral glucose tolerance test between 24 to 28 weeks gestation. All patients 18 years or older and diagnosed with gestational diabetes will be counseled using a standard script discussing the details of the diagnosis, instructions for dietary modifications and measuring blood glucose values, and perinatal risks associated with GDM. All participants will be instructed to measure blood glucose four times a day (fasting and 2 hours postprandial) and maintain a log of blood glucose readings to bring to each visit. We will retrospectively compare glucose control of previous gestational diabetes patients without clinical pharmacist intervention to those who are currently undergoing standard of care in addition to co-management with clinical pharmacy. This study aims to determine if involvement of clinical pharmacy improves patient and perinatal outcomes, as well as improves patient's understanding of their condition. Primary endpoints will include the initial oral glucose intolerance test, glucose values recorded by the patient, and perinatal outcomes. Secondary endpoints will include patient surveys completed at the first and last visit to address understanding of disease state and satisfaction with care.

Results: In Progress

Conclusion: In Progress

global: Y

9:30am – 9:45am C **Effect of Steroids on Post Cardiac Surgery Length of Stay** Athena B

Moderators: Andi Ray
Presenters: Emily-Kate Carter
Evaluators: Kyle Starling
Title: **Effect of Steroids on Post Cardiac Surgery Length of Stay**

Authors: Emily-Kate Carter, Krista Riche, and Jamie Wagner

Background: Steroids can be used for patients undergoing surgery to decrease inflammation that arises due to the trauma and stress of surgery, and they can be useful antiemetics in some patients. Additionally, steroids have been proposed to have many benefits in patients just having undergone surgery such as decreased length of stay, decreased pulmonary complications, decreased infection risk, and a decreased risk of post-cardiac surgery new onset atrial fibrillation (AFib). The benefit of steroids, specifically for post-operative AFib risk reduction, seems to be due to the decrease in C-reactive protein, white blood cell count, and inflammatory cytokines following steroid administration. However, using steroids is a known risk factor for hyperglycemia, and therefore increases insulin demand in post-operative patients. Studies show that post-operative hyperglycemia increases the risk of mortality in cardiac surgery patients with and without diabetes. The purpose of our study is to determine if administering steroids after cardiac surgery has an effect on patients' length of stay.

Methods: This single-center, retrospective group pretest/posttest quasi-experiment included patients admitted to St. Dominic Jackson-Memorial Hospital from June 01, 2023 to December 31, 2023, when steroids were not given to patients post-surgery, and June 01, 2024 to December 31, 2024, when steroids began to be given, who were aged ≥18 years, undergoing major cardiac surgeries, including Coronary artery bypass graft (CABG), Aortic Valve Replacement (AVR), Mitral Valve Replacement (MVR), or Tricuspid Valve Replacement (TVR). Patients were excluded if an Impella device was utilized peri-operatively, if they were treated with antibiotics for known or suspected infection before surgery, or if they died within 48 hours of the surgery. The primary outcome is length of post cardiac surgery ICU stay in hours. Secondary outcomes include total length of post-cardiac surgery hospital stay in hours, prevalence of hyperglycemia within 72-hours post-operation, and prevalence of post-operative-infections within 30 days.

Results: A total of 100 patients were enrolled in this study, with 50 in the steroids group and 50 in the control group. Average length of stay in the ICU was similar in both groups at 88.28 ± 137.30 hours in the control group vs 92.04 ± 137.57 hours in the steroid group (p = 0.89). There was also no statistical difference in total hospital length of stay at 201.08 ± 189.09 hours for the control group vs 193.62 ± 130.84 hours for the steroid group (p= 0.82). The prevalence of hyperglycemia within 72 hours did not differ between the control group with 66% (n=33) and the steroids group with 68% (n=34). No post-operative deep sternal wound infections were observed in either group within 30 days. The only statistically significant finding was a lower rate of post-operative atrial fibrillation (AF) in the steroid group of 14% (n=7) compared to the control group with 48% (n=24) (p= <0.01).

Conclusions: Utilization of post-operative steroids did not impact ICU length of stay or total hospital length of stay. There was not a statistically significant difference in the prevalence of hyperglycemia or deep sternal wound infections between the groups. Post-operative AF occurrence was significantly lower in the steroid group compared to the control group.

global: Y

9:30am – 9:45am R **Evaluation of DKA Resolution with a Revised DKA Protocol in a Community Hospital Setting** Athena I

Moderators: Kayla Lawlor

Presenters: Nancy Henin

Evaluators: brian meister

Title: Evaluation of DKA Resolution with a Revised DKA Protocol in a Community Hospital Setting

Authors: Nancy Henin; Vanessa Velazco; Tracey Bastian; Valerie A. Van Vickle

Background: Diabetic ketoacidosis (DKA) is a life-threatening complication of diabetes that has resulted in an increased hospitalization rate leading to higher healthcare costs. Early and appropriate management of DKA is important to prevent mortality and decrease the risk of complications, such as hypoglycemia, hypokalemia, and cerebral edema. Implementation of a standardized DKA protocol, including fluid resuscitation, insulin therapy, and electrolyte repletion, is important to ensure optimal treatment outcomes. The objective of this study is to assess the time to DKA resolution after modification to the institution's DKA protocol in a community hospital setting.

Methods: This is a single-center, retrospective, Institutional Review Board (IRB)-approved study aimed to evaluate a revised DKA protocol in patients admitted to a 337-bed community hospital. Fluid therapy was adjusted to Lactated Ringers with special considerations for patients with congestive heart failure (CHF)/end-stage renal disease (ESRD). Insulin therapy was modified, including a distinct titration for type 1 vs type 2 diabetic patients. Phosphate supplementation criteria was also included in addition to potassium for electrolyte repletion. Utilizing the order set usage within the electronic health record (EHR), a retrospective chart review was performed to collect relevant data to determine the effectiveness of changes to the DKA protocol comparing data from 2018 (pre-initiation of protocol) and 2023 (post-initiation of protocol) in a 1:1 ratio. The primary outcome is total time on insulin infusion. Secondary outcomes include total time to meeting ADA-based definition of DKA resolution (BG<200 mg/dL and 2 of following: bicarbonate ≥15 mEq/L, venous pH >7.3, and AG≤12 mEq/L) from start of insulin infusion, ICU length of stay, proportion of patients that received appropriate fluid management per protocol, and correlation between beta-hydroxybutyrate (BHB) concentration and DKA resolution. Secondary safety outcomes are incidence of hypokalemia, hypoglycemia (blood glucose <70 mg/dL and <40 mg/dL), and rebound DKA. Descriptive statistics were used to analyze data collected for study outcomes.

Results: A total of 100 patients were included in the study analysis (50 patients in 2018 pre-initiation group and 50 patients in 2023 post-initiation group). Baseline characteristics were comparable between groups, except for a lower percentage of Type 1 diabetic patients in post-initiation compared to pre-initiation group (40% vs 66%, respectively). The primary outcome of total time on insulin infusion was reduced post-initiation of the revised DKA protocol to approximately 18 hours compared to 23 hours pre-initiation of the protocol. Time to meeting ADA definition of DKA resolution from start of insulin infusion was 9.7 hours in post-initiation group and 10.5 hours in pre-initiation group. Total ICU length of stay was 1.8 days for post-initiation group and 2.2 days for pre-initiation group. The proportion of patients that received appropriate fluid management per protocol was 62% in post-initiation group compared to 90% in pre-initiation group. Mean BHB at discontinuation of insulin drip was 0.34 mmol/L in post-initiation group. For safety outcomes, the incidence of hypokalemia was higher in post-initiation vs pre-initiation group (52% vs 36%). Incidence of hypoglycemia (blood glucose <70 mg/dL) was lower in the post-initiation group (52% vs 56%), including the incidence of severe hypoglycemia (blood glucose <40 mg/dL) (6% vs 14%). Incidence of severe hyperglycemia and rebound DKA were comparable between both groups.

Conclusion: Patients treated using the revised DKA protocol required less total time on insulin infusion and had a reduced ICU length of stay. Opportunities to further improve the protocol include identifying strategies to minimize the incidence of hypoglycemia and hypokalemia.

global: Y

9:30am – 9:45am R **Impact of Ideal Versus Actual Body Weight on Analgesic and Sedative Requirements in Critically Ill Patients with Obesity** Athena H

Moderators: Jenna Cox
Presenters: Melanie Datt
Evaluators: Christen Freeman

Title:

Impact of Ideal Versus Actual Body Weight on Analgesic and Sedative Requirements in Critically Ill Patients with Obesity

Authors:

Melanie Datt; Ashley Taylor; Christy Forehand; Emma Pearman; Allison Lopez; Brooke Smith

Objective:

Determine whether ideal body weight dosing of analgesic and sedative medication reduces opioid and sedative requirements in critically ill patients with obesity.

Self-Assessment Question:

True or False: Critically ill patients with obesity who received ideal body weight dosing of sedative medications had lower opioid requirements compared to those in the actual body weight group.

Background:

Analgosedation is the standard of care for managing pain and agitation in mechanically ventilated patients in the intensive care unit (ICU). Most sedative medications are lipophilic, including fentanyl, propofol, midazolam, dexmedetomidine, and ketamine. In patients with obesity, lipophilic drugs have an increased volume of distribution, leading to an increase in drug accumulation in the adipose tissue. This could cause an increase in adverse effects and oversedation. There is limited data about the appropriate dosing of these sedative medications in patients with obesity in the ICU, as a majority of the data is in the operative setting. This data is difficult to extrapolate to the critically ill patient since these patients differ both in their duration of sedation and severity of illness. On February 1st, 2022, our institution changed to an ideal body weight (IBW) dosing strategy for continuous analgesic and sedative medications, including fentanyl, propofol, dexmedetomidine, and ketamine. This retrospective chart review was designed to determine whether utilizing IBW dosing for critically ill patients with obesity would result in decreased analgesic and sedative requirements compared to an actual body weight dosing strategy.

Methods:

This was a single-center, retrospective, observational chart review conducted at a 520-bed tertiary academic medical center. Critically-ill adult patients with a BMI greater than 30 kg/m² who received analgosedation with continuous fentanyl from January 1, 2020 – March 31, 2020 and January 1, 2024 – March 31, 2024 were permitted for inclusion. Patients were excluded from the study if admitted from an outside hospital, admitted to the Neurosciences ICU, or required sedation for elevated intracranial pressure or status epilepticus, or required deep sedation and/or neuromuscular blocking agents. Patients were also excluded if they were on mechanical circulatory support, had a history of opioid use disorder, were prescribed a long-acting oral opioid or fentanyl patch, or had a positive COVID-19 result. The primary outcome was cumulative morphine milligram equivalent (MME) requirements for the duration of fentanyl continuous infusion. Secondary outcomes included cumulative sedation requirements for the duration of continuous fentanyl infusion, cumulative daily benzodiazepine requirements (in midazolam equivalents), cumulative daily MME of as-needed (PRN) opioids, number of antipsychotic PRN doses, highest and lowest daily RASS and pain score, duration of mechanical ventilation, and ICU and hospital lengths of stay.

Results:

Seventy-seven patients were included in the study, with 46 patients in the actual body weight (ABW) group and 31 patients in the ideal body weight (IBW) group. The median BMI was 35.3 in the ABW group and 34.9 in the IBW group. A majority of patients were admitted to the medical ICU in both groups. There was a statistically significant difference in the median cumulative MME requirements (931.2 vs. 537.9, p=0.037). For secondary outcomes, there was a statistically significant difference in median cumulative fentanyl infusion MME requirements (914.1 vs. 485.8, p=0.029), but there was no difference in the requirements of other sedative infusions (propofol, dexmedetomidine, ketamine, and midazolam). There were no differences in cumulative daily PRN benzodiazepine requirements (p=0.334) or PRN opioid MME requirements (p=0.196). For the highest and

lowest daily RASS score, the medians were in the goal range of –2 to 0. There were no differences in duration of mechanical ventilation, ICU length of stay, or hospital length of stay.

Conclusion:

Utilizing an ideal body weight dosing strategy decreased cumulative opioid requirements (in MMEs) in critically ill patients with obesity without increased sedation or PRN opioid or benzodiazepine requirements.

global: Y

9:30am – 9:45am | **Longitudinal analysis of community-onset bacteremia due to ESBL-producing E. coli, K. oxytoca, K. pneumoniae, and P. mirabilis (2016-2024)** Athena A

Moderators: Caren Azurin
Presenters: Raveena Patel
Evaluators: Caroline Jozefczyk

Title: Longitudinal analysis of community-onset bacteremia due to ESBL-producing E. coli, K. oxytoca, K. pneumoniae, and P. mirabilis (2016-2024)

Authors: Raveena Patel, Laura Leigh Stoudenmire, Bryan P. White, Cong Cheng, Xianyan Chen, Daniel B. Chastain

Background:
Bacteremia caused by extended-spectrum β-lactamase (ESBL)-producing Escherichia coli, Klebsiella pneumoniae, Klebsiella oxytoca, and Proteus mirabilis is increasingly prevalent, limiting treatment options and worsening patient outcomes. While prompt carbapenem therapy can reduce mortality in these infections, understanding temporal trends and patient-level risk factors is crucial for guiding empiric treatment and minimizing unnecessary carbapenem use. However, specific clinical information regarding these ESBL-producing organisms as a cause of community-onset bacteremia remains limited. This study investigates the evolving epidemiology of community-onset ESBL-producing bacteremia from 2016 to 2024.

Methods:
This retrospective cohort study included adult patients (≥18 years) presenting to Phoebe Putney Health System in Albany, Georgia, from January 2016 through November 2024 with community-onset bacteremia caused by ESBL-producing E. coli, K. pneumoniae, K. oxytoca, or P. mirabilis, defined by non-susceptibility to ceftriaxone according to antimicrobial susceptibility testing results. Cases were included if the first positive blood culture was obtained during emergency department evaluation or within 48 hours of hospitalization. Patients with polymicrobial bacteremia, incomplete medical records, or transfer from another facility were excluded. Only one isolate per patient per year was included to avoid duplication. Clinical data were extracted from electronic health records using REDCap and included demographics, comorbidities, prior healthcare and antibiotic exposures, infection source, and severity of illness. Descriptive statistics and linear regression analysis were utilized to analyze data.

Results:
A total of 127 cases of community-onset ESBL-producing E. coli, K. pneumoniae, K. oxytoca, or P. mirabilis bacteremia were identified. E. coli was the most frequent isolate (83.4%, 106/127), followed by K. oxytoca (11.8%, 15/127). The median age of the cohort was 67 years (IQR 58-77), with a majority being female (56.7%) and identifying as African American or Black (52.8%). The median Charlson Comorbidity Index was 5 (IQR 3-7). Most patients presented from home (77.8%) with a urinary source of infection (66.9%). Few patients (14.2%) had a prior history of ESBL-producing organisms in cultures within the preceding 1 year. Antibiotic use was reported in 37.0% and 61.4% of patients within the prior 30 and 90 days, respectively. Similarly, 39.4% and 60.6% had a hospitalization within the prior 90 days and 1 year, respectively. The overall prevalence of ESBL-producing isolates increased significantly from 6.8% in 2016 to 15.5% in 2024 (p=0.008), representing an approximate annual increase of 1%. This upward trend may be attributed to multiple factors, including high comorbidity burden among patients (median Charlson Comorbidity Index, 5 [IQR, 3-7]) and recent healthcare or antibiotic exposure.

Conclusion:
This longitudinal analysis revealed a significant increase in the prevalence of ESBL bacteremia from 2016 to 2024. A majority of the risk factors analyzed in this study were not statistically significant in explaining the rise of ESBL Bacteremia. Our study suggests that other factors were not analyzed in this study which could be contributing to the rise of ESBL bacteremia. Further investigation is needed to identify and understand other potential factors that may be contributing to the rise of the prevalence of ESBL bacteremia.

Correspondence: rapatel@phoebehealth.com

global: Y

9:30am – 9:45am F **A Profile of Direct Purchasing** Athena J

Moderators: Janae Townsend
Presenters: Lauren Flick
Evaluators: Tabitha Carney

A PROFILE OF DIRECT PURCHASING

Lauren Flick, Abbi Rowe

Background: For many health systems, almost the entirety of the drug inventory is purchased “indirectly” through a wholesale partner. This traditional model allows for streamlined access to a variety of products, provides an easy-to-use and regulatorily compliant ordering process, offers quick and consistent logistics, and is able to facilitate smaller, single unit of sale purchases. However, for health systems with the appropriate infrastructure, establishing direct purchasing relationships can be beneficial. AdventHealth’s Central Florida Division includes a Central Fill Pharmacy (CFP) that supplies drugs daily via an internal courier service to 18 acute care facilities within the division. CFP is located at an offsite warehouse space with roughly 15,000 square feet of medication storage space, allowing for pallet storage of bulk medication purchases. This system provides advantages based on the volume of medications purchased, as well as storage solutions for larger orders, which can be leveraged when optimizing cost savings though alternate purchasing streams.

Purpose: Evaluate historic direct medication purchasing trends for process optimization opportunities.

Methods: Direct purchasing data from the CFP facility was compiled using historic invoices and logged in an Excel spreadsheet. All direct commercial medication purchases made from 3 September 2021 to December 2024 by CFP were included. Supplies and 503B purchases were excluded. The invoice date, medication description, NDC, quantity purchased, average blended price available at the wholesaler at the time of purchase, and direct price [LF1] were all recorded. Descriptive analysis of the data, including counts of unique molecules and NDCs, averages of cost savings and quantities purchased, and various pivots of the historic data was performed using Excel. Data visualization charts were created to display the findings and begin development of a comprehensive dashboard for ongoing tracking and optimization of direct pharmacy purchasing.

Results: A total of 757 historic transactions were included in the analysis, with the highest number (n = 353) occurring in 2023. While the median amount spent per order fluctuated between years ($8,462 in 2021, $9,600 in 2022, $7,150 in 2023, and $7,725 in 2024) the median savings per order decreased each year; from $5,600 in 2021 to $1,944 in 2024. This suggests a willingness to complete purchases with smaller cost reductions associated with them, which could be related to familiarity and comfort with the process reducing the time investment required. The largest percent of savings from a single drug came from dexmedetomidine, which accounted for 12.43% of total savings. Heparin, which had the highest number of total units purchased at 413,000 units, accounted for 5.88% of savings, and enoxaparin, which had the most purchases (158) and NDCs (21) accounted for 5.25%. The drug class with the highest portion of savings was antimicrobials, with 35.32% of overall spendings, followed by cardiovascular drugs, which had the highest number of buys (261), NDCs (55), and individual units (973,006) and accounted for 28.49% of savings. For analysis of purchasing source, Medigi was the highest in number of buys (399), maximum saving percent (86.5%), NDCs (133), and total units purchased (1,631,072), and accounted for 60.70% of total savings.

Conclusions: Direct purchasing is capable of sufficient procurement cost reduction for AdventHealth Central Fill Pharmacy to continue with the process. While a few purchases of high-discount drugs can have result in large per-transaction savings, most of the accumulated savings over time comes from lower rates of savings on commonly purchased drugs. Optimizing this process has the potential to allow for greater cost reduction in the future.

global: Y

9:30am – 9:45am L **Evaluation of Amoxicillin-Clavulanate as Oral Step-Down Therapy for Gram-Negative Bloodstream Infections** Parthenon 1

Presenters: William Feese

Evaluators: Katie Coffee, Lindsay Reulbach

Title: Evaluation of Amoxicillin-Clavulanate as Oral Step-Down Therapy for Gram-Negative Bloodstream Infections

Authors: William W. Feese; Jennifer Liriano-Suarez; Jessica Arnold; Hayden W. Caldwell; Brandon K. Hawkins; Samantha D. Walker, ; Helen Ding

Objective: Evaluate the impact of BID versus TID dosing on the efficacy of amoxicillin-clavulanate as oral step-down therapy for gram-negative bloodstream infections.

Self Assessment Question: For a patient transitioning to amoxicillin-clavulanate for treatment of a gram-negative bloodstream infection, what is the most appropriate dosing regimen?

Background: Gram-negative bloodstream infections (BSIs) are a leading cause of hospitalizations in North America, with Escherichia coli, Klebsiella pneumoniae, and Pseudomonas aeruginosa being the most common causative organisms. Historically, gram-negative BSIs have been treated exclusively with IV antibiotics, but recent evidence suggests that oral agents, such as beta-lactams or fluoroquinolones, are effective as oral step-down therapy to complete the treatment course. The impact of amoxicillin-clavulanate twice daily (BID) versus three times a day (TID) dosing frequency on clinical outcomes for bloodstream infections remains unclear.

Methods: This was a single-center, retrospective cohort study of adult patients with gram-negative BSIs who received amoxicillin-clavulanate as oral step-down therapy at a 710-bed academic medical center between May 1, 2019 and June 30, 2024. The co-primary outcomes were 30-day all-cause mortality and 30-day incidence of infection recurrence.

Results: Amoxicillin-clavulanate BID and TID were similar with regard to the co-primary outcomes. For the primary outcome, 30-day all-cause mortality was experienced by 5 (2.8%) patients in the BID and no patients in the TID group (p = 1.00). 30-day recurrence was experienced by 7 (3.8%) of the BID group patients compared to 1 patient (2.9%) of the TID group (p = 1.00). In the subgroup analysis, there was no statistically significant difference between Body Mass Index (BMI) ≥ 30 kg/m2 and BMI < 30 kg/m2 or complicated and uncomplicated blood stream infections when comparing amoxicillin-clavulanate BID and TID dosing.

Conclusion: Both Amoxicillin-clavulanate BID and TID dosing frequencies demonstrate efficacy as oral (PO) stepdown therapies for patients with gram-negative BSI. With low rates of mortality and recurrence seen with PO antibiotic therapy, future studies should address the total duration of antibiotic therapy for gram-negative BSI.

global: Y

9:30am – 9:45am L **Intravenous Thrombolytic Therapy in Acute Ischemic Stroke with Chronic Anticoagulation Therapy** Parthenon 2

Moderators: Criag MacDonald

Presenters: Lauren Ducote

Evaluators: Che Jordan

Title: Intravenous Thrombolytic Therapy in Acute Ischemic Stroke with Chronic Anticoagulation Therapy

Authors: Lauren Ducote, Jessica Starr, Nathan Pinner

Objective: Assess bleeding outcomes in patients on chronic anticoagulation therapy who are treated with an intravenous thrombolytic for acute ischemic stroke.

Self-Assessment Question: Based on recent primary literature, patients on chronic direct oral anticoagulant (DOAC) therapy who receive intravenous thrombolysis for acute ischemic stroke are at increased risk for hemorrhagic stroke. (True/False)

Background: Guidelines for stroke management recommend against giving intravenous thrombolytic therapy for an acute ischemic stroke if the patient has received anticoagulation within the previous 48 hours unless certain labs are assessed first. Recent literature suggests that there is not an increased risk of adverse bleeding events in patients who have taken anticoagulation recently compared to those who have not.

Methods: This is a single center, retrospective study conducted on all patients admitted with an acute ischemic stroke who received intravenous thrombolytic therapy between May 1, 2013 to September 30, 2024. Patients were included if they were 18 years or older, admitted for an acute ischemic stroke, and received intravenous thrombolytic therapy. Patients were excluded if they received thrombolytic therapy for any other indication, had a hemorrhagic stroke on presentation, or received an endovascular intervention. The primary outcome is incidence of adverse bleeding within 24 hours of thrombolytic therapy which included the composite of intracranial hemorrhage, receipt of ≥2 units of packed red blood cells, or a >2 mg/dL fall in hemoglobin. Secondary outcomes include intracranial hemorrhage, receiving ≥2 units of packed red blood cells,>2 mg/dL fall in hemoglobin, DOAC reversal, length of stay, discharge disposition, and readmission within 30 days.

Results: Of the 265 patients reviewed, 245 patients were included. There were 11 patients taking oral anticoagulation and 234 patients not taking oral anticoagulation prior to admission. There was no statistically significant difference in adverse bleeding observed between the anticoagulation and no anticoagulation groups (18% vs. 12%, P=0.62). No statistical difference was observed in any of the secondary endpoints.

Conclusion: This study determined there was insufficient evidence to determine if patients taking chronic oral anticoagulation have the same adverse bleed risk after thrombolytic administration as patients not on anticoagulation.

global: Y

9:30am – 9:45am L **Outcomes of a Pharmacy-Driven Electrolyte Replacement Protocol in Non-ICU Settings** Olympia 2

Moderators: Skyler Brown
Presenters: Andrea Dobbs
Evaluators: Kristen Keen

Title: Outcomes of a Pharmacy-Driven Electrolyte Replacement Protocol in Non-ICU Settings

Authors: Andrea Dobbs, Caroline Chappell, Carolyn Coulter, Alex Chappell

Objective: Participants will be able to explain the benefits and safety of implementing a pharmacy-driven electrolyte replacement protocol in non-ICU settings.

Self-assessment question:
Which of the following is a potential benefit of a pharmacy-driven electrolyte replacement protocol in non-ICU settings?
A. Decreased rate of over-replacement
B. Reduction in infusion-related adverse events
C. Shorter time to electrolyte replacement
D. Improved post-replacement monitoring
E. C & D

Background: Electrolyte replacement is a fundamental part of patient care but can be time-consuming and variable due to differences in provider training and clinical preferences. This variability may lead to inconsistent dosing, monitoring, and follow-up resulting in delays or inadequate replacement. In high acuity settings, this can increase the risk of complications such as arrhythmias and prolonged recovery. To address this, many institutions have adopted standardized electrolyte replacement protocols. In ICU settings, studies have shown that protocolization of electrolyte replacement reduces practice variation and improves timeliness and monitoring. At our institution, a pharmacy-driven electrolyte protocol, that allows pharmacists to initiate replacement and order follow-up labs, was implemented in the ICU. This has improved workflow efficiency and monitoring while enabling physicians to focus on more complex clinical issues. However, electrolyte management on general medicine floors remains unstandardized and largely dependent on individual provider judgment. This study evaluates whether extending the pharmacy-driven protocol to non-ICU settings yields similar benefits.

Methods: This IRB-approved, single-center, retrospective cohort study included patients $\geq$18 years admitted to one of four general medicine floors at Alamance Regional Medical Center in Burlington, North Carolina. In August 2024, a pharmacy-driven electrolyte replacement protocol was implemented, allowing pharmacists to replace potassium, magnesium, and phosphorus per protocol and order follow-up labs. Patients were excluded if they had end-stage renal disease on renal replacement therapy, metabolic disturbances (e.g., ketoacidosis or renal insufficiency), direct ICU or hospice admission, died before replacement, remained in the emergency department, or had scheduled daily replacement. Prior to protocol implementation, electrolyte replacement was primarily replaced by the attending physician. Data were obtained from electronic medical record reports identifying physician-ordered and pharmacy-ordered replacement. Manual chart review was used to collect demographics, electrolyte-specific data (labs, replacement), and adverse events (infiltration or supratherapeutic levels). Due to non-normal distribution, the Mann–Whitney U test was used for continuous variables and the Fisher exact test for categorical data.

Results: The representative pre-protocol group (June–July 2024) included 46 patients who received replacement by the physician. The representative post-protocol group (September–October 2024) included 48 patients who received electrolyte replacement per protocol by pharmacy. There were 110 replacement opportunities in the pre-protocol group and 148 in the post-protocol group. Following protocol implementation, the overall median time to replacement significantly improved from 4.9 to 3.7 hours (median difference: 1.2 hours; $p < 0.00001$). When analyzed individually, potassium replacement time decreased from 4.9 to 2.9 hours ($p < 0.0001$), and magnesium from 5.0 to 3.9 hours ($p = 0.0053$), while phosphorus showed no significant change

(p = 0.88). Post-replacement monitoring, measured by follow-up labs ordered, also improved significantly with missed lab orders decreasing from 12.7% to 1.4% (p = 0.0003). No adverse events such as infusion reactions or supratherapeutic levels were observed in either group.

Conclusion: Protocolized electrolyte replacement has been shown to improve care in high-acuity settings such as ICUs by promoting timely and consistent management. However, limited evidence exists regarding its effectiveness on general medical floors. Our findings align with current literature and extend these benefits to the non-ICU setting. A key limitation of our study is the use of scheduled replacement time as a surrogate for actual administration time. While this approach helped reduce workflow-related variability, it may skew results toward best-case outcomes. Additionally, while the overall sample size was adequate, secondary analyses of individual electrolytes were limited due to smaller sample sizes. In conclusion, our results support the use of a pharmacy-driven electrolyte replacement to improve efficiency and monitoring on general medicine floors without compromising patient safety. Importantly, this study also highlights the value of pharmacy integration into protocol-driven care to free up physician time so they can focus on managing higher-acuity clinical issues.

Contact information: andrea.dobbs@conehealth.com

global: Y

9:50am – 10:05am A **Activation Accuracy of Proprietary Bag and Vial Systems** Olympia 1

Moderators: Don Tyson
Presenters: Ellis Simerly
Evaluators: KIMM FREEMAN

Title: Activation Accuracy of Proprietary Bag and Vial Systems

Authors: Ellis Simerly, Becky Goldstein, Scott Gourley, George Smith, Doug Furmanek, Harrison Jozefczyk

Objective: The primary endpoint was the proportion of properly activated bag and vial systems.

Self-Assessment Question: Are proprietary bag and vial systems properly activated by nursing staff?

Background: Proper medication administration is critical to ensuring patient safety and therapeutic efficacy, with device activation playing a central role in preventing errors. Proprietary bag and vial systems are widely used in clinical settings to facilitate accurate medication delivery However, improper activation of these devices could result in medication errors, suboptimal dosing, and adverse patient outcomes. Despite widespread use, there is limited published research examining the accuracy of proprietary bag and vial system activation. Lack of research in activation systems leaves a gap in understanding of activation errors and their potential prevalence. This study aimed to address this gap by evaluating the accuracy of proprietary bag and vial system activation in clinical settings. By identifying error rates of common activation mistakes, this research sought to inform improvements in training, protocols, and device usage, ultimately enhancing patient safety and medication administration practices.

Methods: This study was conducted over one month or until 100 encounters were audited. The primary endpoint was the proportion of properly activated bag and vial systems. The secondary endpoints were to identify patterns of activation errors related to specific drugs and evaluate the distribution of activation errors across different levels of inpatient acuity. Report generation identified encounters where these activation systems were to be utilized. In-person audits were then performed to verify activation status. Focus was on the device malfunction rather than evaluating individual providers. Device malfunction was defined as the vial not securely attached to the bag, the incomplete transfer of medication into diluent, the incomplete mixing of the medication in the vial, or the compromised integrity of the system due to leaks of contamination. Audits were conducted by a trained research team member, who underwent training on study objectives, data recording, and intervention policy. This study followed a non-punitive, quality improvement approach, ensuring that identifiable provider information was not linked to observations to maintain confidentiality. Observations were documented on paper and transcribed into a secure data collection tool for analysis.

Results: A total of 85 observations were made, with 96% of proprietary bag and vial systems properly activated. The remaining 4% of errors were found exclusively on medical-surgical nursing units. Of these errors, 33% (n=1) involved pre-attached IV admixture systems with ampicillin-sulbactam, while 67% (n=2) were associated with vial reconstitution adapter systems and vancomycin. The errors with pre-attached systems involved incomplete reconstitution, while those with vial reconstitution systems were due to incomplete transfer to diluent.

Conclusion: This study identified a 4% overall error rate, with vial reconstitution adapter systems accounting for 67% of errors, all of which occurred on medical-surgical nursing units, highlighting a need for targeted education. Future steps could include implementing training focused on proper activation techniques, utilizing a checklist with automated alerts for each activation process, and conducting a follow-up study to evaluate post-education error rates. Limitations include the national fluid shortage, which likely reduced system use and underestimated error rates, as well as the study’s reliance on a single observer.

global: Y

9:50am – 10:05am B **Implementing A Practical and Effective Approach to Expand Naloxone Access for Geriatric Veterans at the Salisbury VA Health Care System (SVAHCS)** Athena C

Moderators: Alexander Tunnell
Presenters: Elizabeth Martinez Delgado
Evaluators: Amanda Moyer

Implementing A Practical and Effective Approach to Expand Naloxone Access for Geriatric Veterans at the Salisbury VA Health Care System (SVAHCS)

Authors: Elizabeth Martinez Delgado, Allison E. Strain, Chelsea McDonnell, Camille Robinette, Sarah J. Hopper
Salisbury Veterans Affairs Health Care System – Salisbury, NC

Objective: Compare percentage of naloxone prescriptions initiated by pharmacist and primary care provider (PCP) to older adult high-risk Veterans.

Self-Assessment Question: Based on the objective of this quality improvement project, which of the following Veterans would be more likely to accept a supply of naloxone spray?

Background/Purpose: Veterans aged 65 years and older, due to physiological changes experienced through the aging process, are at an increased likelihood of developing enhanced side effects to opioids and sedatives. Due to these concerns, access to naloxone in older adults prescribed a combination of opioid prescriptions plus sedatives is important to reduce the risk of opioid overdose. The purpose of this quality improvement project is to assess whether pharmacist led prescribing increases naloxone access to older adult Veterans in comparison to naloxone prescribing by a primary care provider at the SVAHCS.

Methodology: Older adult Veterans with an active opioid prescription plus a sedative (barbiturates, benzodiazepines, medications for opioid use disorder, non-benzodiazepines, and skeletal muscle relaxants) will be included. To further assess risk, the Stratification Tool of Opioid Risk Mitigation (STORM) will also be utilized. Through the Opioid Overdose Education & Naloxone Distribution (OEND) dashboard one hundred Veterans meeting these criteria will be identified. Fifty Veterans will be contacted and offered a naloxone prescription alongside naloxone education. A retrospective chart review will be completed to assess if 50 Veterans with scheduled PCP appointments from December 1st, 2024 to February 28th, 2025 were prescribed naloxone by their PCP.

Results: The baseline characteristics of this project include average age 73 years old ± 5.4, 94.6% (n=88) male sex, 75.3% (n=70) white race, and predominant comorbidities were obstructive sleep apnea 45.2% (n=42) and chronic obstructive pulmonary disease 34.4% (n=32). 94.6% (n=88) of Veterans included had a commitment opioid + sedative hypnotic prescription, 6.5% (n=6) included had concomitant opioid + benzodiazepine prescription, 93.5% (n=87) were chronic opioid users, average morphine equivalent daily dose 35.7 ± 38.2, and on average each Veteran had an average of 1.6 ± 1 additional CNS active medications. The primary objective was met in 88.7% (n=42) of Veterans who were initiated on a naloxone prescription by a pharmacist in comparison to 8.3% (n=4) of Veterans receiving a naloxone prescription after their PCP appointment. The secondary objectives resulted 75.6% (n=34) chronic opioid users, 82.2% (n=37) low STORM risk, 17.8% (n=8) medium STORM risk for the targeted pharmacist initiation component and 93.8% (n=45) chronic opioid users, 79.2% (n=38) low STROM risk, 20.8% (n=10) medium STORM risk for the standard of care, PCP initiation component.

Conclusions: Targeted pharmacist naloxone prescribing yielded positive results. Results are attributed to personalized conversations tailored to Veteran’s medications which increased the acceptance of naloxone supply, opioid overdose education, and medication burden counseling. Overall, naloxone acceptance was unrelated to chronic opioid use, STORM risk, or specific CNS depressant medication. Additionally, naloxone under-prescribing during standard of care in comparison to targeted pharmacist prescribing is likely multifactorial.

Contact Information: elizabeth.martinezdelgado@va.gov

global: Y

9:50am – 10:05am B **Medication Adherence for Diabetes (MAD) Quality Measure and Correlation to A1c and Other Diabetes Measures in a Medicare Advantage Population** Athena D

Moderators: Brandi Dahl
Presenters: Rachel Winters
Evaluators: Naomi Yates

Title: Medication Adherence for Diabetes (MAD) Quality Measure and Correlation to A1c and Other Diabetes Measures in a Medicare Advantage Population

Authors: Rachel Winters, Amanda Moyer, Sarah Blandy, Victoria Hetherington, and Casey Penland

Background: The Centers for Medicare and Medicaid Services (CMS) provides financial incentives for insurance plans demonstrating high-quality care to improve patient outcomes. Medicare Advantage (MA) plan performance is assessed by nearly 40 quality measures, with diabetes care heavily represented by 5 of those measures. In accordance with ADA clinical practice guidelines, holistic care is evaluated using Diabetes Care – Eye Exams, Kidney Health Evaluation in Patients with Diabetes, and Statin Use in Persons with Diabetes. Further, Medication Adherence for Diabetes (MAD) and Diabetes Care – Blood Sugar Controlled are emphasized as triple-weighted quality measures impacting the overall star rating. The national average ratings for Medicare Advantage Prescription Drug (MA-PD) plans from 2022-2025 show a flat average pass rate of 86% four years in a row for the MAD quality measure but a steadily increasing pass rate each year (78%, 78%, 79%, 83%) for controlled blood sugar. This leads to speculation that the MAD measure may not correlate with other positive health outcomes in diabetic patients.

Methods: This is a retrospective cohort study including Aetna Medicare Advantage beneficiaries attributed to a Prisma Health primary care provider under contract with the inVio Health Network who indexed into the MAD and subsequent diabetes control quality measures in the 2023 measurement year. Data will be collected from January 1, 2023 to December 31, 2023. Notable exclusion criteria are those excluded from the MAD quality measure by definition (end stage renal disease, insulin use, or hospice patients). The primary endpoint is to identify the relationship between MAD performance and A1c control, comparing both the Diabetes Care – Blood Sugar Controlled quality measure and patients' actual A1c. Secondary endpoints include the correlation between MAD and additional diabetes care quality measures including eye exams, kidney health evaluation, and statin use. Tertiary endpoints include factors affecting MAD measure performance such as low-income subsidy, dual eligibility, indexing medication class, and number of classes prescribed.

Results: There was no statistically significant difference found between MAD pass/fail rates and the clinical definition of A1c control (<7%) (p=0.98). Statistical significance was observed between MAD and annual eye exams (EED) (p<0.05) as well as annual kidney health evaluation (KED) (p< 0.05). However, statistical significance was not observed between MAD and the HBD (p=0.31) or SUPD (p=0.30) quality measures. Most patients in this study were well-controlled on 1-2 diabetes medications with an A1c <7%.

Conclusion: In this study population, MAD performance does not impact actual A1c, the triple-weighted HBD quality measure, or the clinical definition of A1c control.

global: Y

9:50am – 10:05am C **Evaluating CPP Impact to Ensure GDMT, Improve Heart Failure Patient Outcomes, and Reduce Readmissions** Athena B

Moderators: Andi Ray
Presenters: Allison Johnson
Evaluators: Kyle Starling

Title: Evaluating CPP Impact to Ensure GDMT, Improve Heart Failure Patient Outcomes, and Reduce Readmissions

Authors: Allison D. Johnson; Kathy Davari; Mary K. Pounders

Background: The prevalence of heart failure (HF) is increasing annually with approximately 6.7 million American adults age 20 or older currently affected. The cost of HF in 2012 was estimated to be $30.7 billion. Previous studies have highlighted the role that clinical pharmacists can play in improving hospital readmission rates for patients with HF. The Atlanta VA Health Care System has a procedure in place for clinical pharmacist practitioners (CPP) to assess patients recently discharged from the hospital after a HF exacerbation. Patients are identified using a dashboard that lists any patient recently discharged with an exacerbation. This project aims to evaluate the efficacy of the Atlanta VA CPP interventions related to preventing readmissions for HF patients. A focus will be placed on interventions with Guideline Directed Medical Therapy (GDMT) agents.

Methods: This project is a retrospective quality improvement project comparing readmission rates and prescribing rates of GDMT agents of patients assessed by a CPP within 10 days of a HF exacerbation hospital discharge compared to patients without CPP assessment. For this project, a readmission is defined as a hospitalization within 30 days of initial discharge for a HF exacerbation. Patients that receive care from the Atlanta VA who have a diagnosis of HF during the year 2023 and the year 2024 were identified from the VA electronic health record. Fifty patients with a HF hospitalization in the year 2023 were randomly selected to evaluate their readmission rates and GDMT agents. Fifty patients with HF hospitalization in the year 2024 were randomly selected to evaluate their readmission rates and GDMT agents following CPP intervention. Data collection points will include, but are not limited to, age, gender, time of hospitalization, GDMT medications before and after hospitalization, GDMT agents after CPP assessment, patient readmission, primary care provider or clinic, and CPP who assessed the patient. Data will be recorded without patient identifiers and will be maintained confidentially. Upon review of the data, the impact of CPP’s assessment on patients with a hospitalization for HF exacerbation will be assessed.

Results: In progress

Conclusions: In progress

global: Y

9:50am – 10:05am R **Evaluation and optimization of the post-operative colorectal surgery multimodal pain order set** Athena H

Moderators: Jenna Cox

Presenters: Madison Pinke

Evaluators: Christen Freeman

Title: Evaluation and optimization of the post-operative colorectal surgery multimodal pain order set

Authors: Madison Pinke, Jerry Robinson

Background: According to guidance from the American Society of Colon and Rectal Surgeons and the Society of American Gastrointestinal and Endoscopic Surgeons, a multimodal pain management strategy for postoperative patients is recommended to reduce length of stay and have earlier return of bowel function. A multimodal pain regimen is defined as using multiple medications with difference mechanisms of pain control to act synergistically in order to enhance analgesic effect. Around 2016, Huntsville Hospital implemented a multimodal pain protocol for post-operative colorectal surgery patients as part of an enhanced recovery after the surgery process. However, this multimodal pain management protocol has not been updated since initiation and utilization rates of full multimodal approach appeared low. The purpose of this retrospective chart review is to evaluate the current use of pain management in post-operative colorectal patients, determining rate of compliance with defined order sets, and incorporating current literature-supported changes into updated orders to increase overall compliance.

Methods: This single-center, pre-post implementation study evaluated the multimodal pain regimen ordered at Huntsville Hospital following surgery between June 2024 and August 2024. Patients in this study were 18 years or older and had an initiated “COLOREC Abdominal Surgery PostOp” order set. A chart review was completed for included patients. Data collected from the electronic health record (EHR) included: demographic information, surgeon, method of surgery, multimodal pain regimen ordered, multimodal pain regimen received by the patient, additional pain medications needed, bowel regimen ordered, hospital discharge status and length of stay. Once the pre-intervention data was collected, recommended changes were presented to the group of colorectal surgeons for inclusion in updated order sets. Planned post-implementation data collection will match pre-implementation data types and outcome differences. The primary endpoint was utilization rates of multimodal pain order set as defined by the percentage of patients who received a multimodal pain regimen. The secondary endpoint was length of stay (days). Descriptive statistics were used to analyze the data.

Results: Analysis of pre-implementation data revealed that complete multimodal pain regimens were not consistently utilized in GI colorectal surgery post-operative patient care. However, the data demonstrated that when multimodal pain regimens were implemented, there was a reduction in length of stay. Implementations went live April 9, 2025.

Conclusion: Although post-implementation data remains limited due to recent initiation, the preliminary findings are encouraging as they are already demonstrating improved utilization.

global: Y

9:50am – 10:05am R **Evaluation of the Safety and Efficacy of Early Long-Acting Insulin in Diabetic Ketoacidosis** Athena G

Moderators: Spencer Roper
Presenters: Emily Davis
Evaluators: Vince Buttrick

Title: Evaluation of the Safety and Efficacy of Early Long-Acting Insulin in Diabetic Ketoacidosis

Authors: Emily Davis, McKenzie Hodges, Lauren Duty, Aayush Patel

Background: Diabetic ketoacidosis (DKA) is a life-threatening complication of uncontrolled diabetes mellitus. Hospital admissions for DKA have increased significantly, rising by 55% over the past decade. Treatment for lowering blood glucose and resolving acidosis in DKA is to administer short-acting insulin via continuous infusion. Once resolved, subcutaneous long-acting insulin is administered one to two hours prior to discontinuing the continuous infusion. This current standard of care is time-intensive, requires heightened monitoring, and is associated with rebound hyperglycemia as well as transition failure. Insulin glargine, a long-acting subcutaneous insulin, is conditionally recommended by the American Diabetes Association 2024 Consensus Report as an adjunct therapy to continuous IV insulin to reduce the duration of treatment and improve outcomes. Preliminary literature supports earlier administration of insulin glargine with continuous IV insulin for reducing time to DKA resolution and hospital length of stay without increasing hypoglycemia risk. However, there are uncertainties as to which patient population would benefit best from earlier long-acting insulin administration and what dose of insulin glargine to utilize. The purpose of this study was to determine the impact of administering insulin glargine within three hours of initiating continuous IV insulin in moderate to severe DKA patients.

Methods: This was a retrospective chart review conducted at Piedmont Columbus Regional Midtown of adult patients diagnosed with moderate or severe DKA who received continuous IV insulin and early insulin glargine. Early administration was defined as insulin glargine given within three hours of IV insulin initiation, whereas late administration was insulin glargine given at transition. The primary objective of this study was to compare the time to DKA resolution between patients who received early insulin glargine versus those who received late. The secondary objectives were to compare hospital length of stay, the rate of blood glucose decline, incidence of DKA reoccurrence, incidence of hypoglycemia, and incidence of hypokalemia in patients who received early insulin glargine versus those who received late. All outcomes were analyzed using student t-test or descriptive statistics. Patients were excluded if they presented with euglycemic DKA, were diagnosed with septic shock, required surgery within 48 hours of continuous IV insulin discontinuation, received continuous IV insulin for less than six hours, and/or received systemic steroids during admission.

Results: There was a total of 100 patients included in the study, 22 patients that received early insulin glargine and 78 that received late. Baseline characteristics were not significantly different between groups, with most patients having severe DKA and a history of type one diabetes. For the primary outcome of time to DKA resolution, the average time for late administration was 14.77 hours and 13.18 hours for early. The average time to DKA resolution was not significantly different between groups. For the secondary outcomes, average hospital length of stay was 2.99 days for late administration and 3.86 days for early. Average decrease in blood glucose per hour was significantly different with 35.94 for late administration and 53.42 for early. Incidence of DKA reoccurrence was significantly different with 26% of patients who received late administration and 4.5% of patients who received early. Incidence of rebound hyperglycemia was significantly different with 71% of patients who received late administration and 23% of patients who received early. Incidence of hypoglycemia was 13% of patients who received late administration and 14% of patients who received early. Incidence of hypokalemia was 56% of patients who received late administration and 50% of patients who received early.

Conclusion: Early administration of long-acting insulin has the potential to mitigate DKA reoccurrence. Administering insulin glargine earlier in the treatment course had a similar safety profile to the current standard of care with no significant differences in hypoglycemia or hypokalemia. Further research is needed to fully determine the optimal timing of administration and dose of insulin glargine.

Contact: Emily.Davis2@piedmont.org

global: Y

9:50am – 10:05am R **Impact of Extracorporeal Membrane Oxygenation (ECMO) Circuit Age on Vancomycin Dosing Requirements in Critically Ill Patients** Athena I

Moderators: Kayla Lawlor
Presenters: Hope Elrod
Evaluators: brian meister

Impact of Extracorporeal Membrane Oxygenation (ECMO) Circuit Age on Vancomycin Dosing Requirements in Critically Ill Patients

Authors: Hope Elrod, Kathleen Jerguson, Erin Massarello

Background:

Extracorporeal Membrane Oxygenation (ECMO) alters drug pharmacokinetics, particularly in the early phase (<96 hours), when drug sequestration onto the circuit can lead to lower circulating concentrations. Over time, the formation of a biofilm may reduce sequestration, potentially altering dosing needs. Understanding how ECMO circuit age affects vancomycin dosing is critical for optimizing therapy in critically ill patients. This study evaluates the impact of ECMO circuit age on vancomycin dosing and therapeutic target attainment.

Methods:

This retrospective, observational study included critically ill patients at Wellstar Kennestone Regional Medical Center who received IV vancomycin while on ECMO from January 1, 2016, to July 31, 2024. Patients were categorized into early (<96 hours) and late (≥96 hours) ECMO groups. The primary outcome was the difference in mg/kg/day dosing required to achieve therapeutic vancomycin troughs. Secondary outcomes included the proportion of patients achieving therapeutic troughs and the impact of patient demographics, renal function, and loading dose strategies on dosing requirements. CRRT patients were excluded due to potential for additional drug sequestration. Mg/kg dosing was calculated using actual body weight unless the patient was >120% of ideal body weight, in which case adjusted body weight was used. Descriptive statistics were utilized and statistical analyses included chi-square tests, Fisher's exact tests, and logistic regression.

Results:

Sixty patients were included (30 per group). Patients in the early circuit ECMO group received an actual mg/kg/day vancomycin dose of 42.95 compared to 44.21 in the late circuit group. To achieve an extrapolated therapeutic trough of 15 mcg/mL, the mg/kg/day dose was significantly higher in the early circuit compared to the late circuit group (52.58 mg/kg/day vs. 41.21 mg/kg/day, $p = 0.019$).

Among patients who received a loading dose, the mg/kg/day dosing required to reach a therapeutic trough was also significantly higher in the early circuit group compared to the late circuit group (56.6 vs. 36.9 mg/kg/day, $p = 0.0168$). Patients who did not receive a loading dose had no significant difference in dosing requirements between early and late ECMO phases. Likewise, there were no statistically significant differences in dosing between those who received a loading dose and those who did not.

Mortality was higher in the late ECMO group ($\chi^2 = 7.117$, $p = 0.0074$), while differences in therapeutic trough attainment ($p = 0.091$) and loading vs. no-loading groups ($p = 0.5731$) were not significant between groups. Logistic regression found that vancomycin duration ($p = 0.016$) and early versus late circuit ECMO ($p = 0.0019$) were statistically significant factors influencing initial vancomycin trough levels.

Conclusions:

Patients initiated on vancomycin within the first 96 hours of ECMO required significantly higher doses to achieve therapeutic levels compared to those started later. The impact was most pronounced in patients who received a loading dose, suggesting that aggressive initial dosing may be necessary in the early ECMO phase. These findings highlight the importance of close therapeutic drug monitoring and tailored dosing strategies to optimize vancomycin therapy in ECMO patients.

global: Y

9:50am – 10:05am | **Evaluation of the Necessity of Gram-negative Coverage in Skin and Soft Tissue Infections (SSTIs)** Athena A

Moderators: Caren Azurin
Presenters: Blake Wannarat
Evaluators: Caroline Jozefczyk

Title: Evaluation of the Necessity of Gram-negative Coverage in Skin and Soft Tissue Infections (SSTIs)

Authors: Blake Wannarat, Rachel Langenderfer, Ryan Lally, Matthew Timmons, Brittany NeSmith, Eve Woodum, Olivia Whitworth, Michael Shaw

Background: Skin and soft tissue infections (SSTIs) range from mild to severe, involving microbial invasion of the skin and soft tissues. Most SSTIs are caused by gram-positive pathogens, including *Staphylococcus aureus* and beta-hemolytic *streptococci*. The Infectious Diseases Society of America (IDSA) guidelines recommend classifying SSTIs as purulent or non-purulent and by severity to guide targeted antimicrobial therapy, emphasizing *S. aureus* in purulent and *streptococci* in non-purulent cases. The objective of this study was to evaluate the necessity of empiric broad-spectrum gram-negative coverage in uncomplicated SSTIs at a community hospital in the southeast of the United States.

Methods: This was a single center, retrospective cohort study. The electronic medical record system was utilized to identify hospitalized adults ≥18 years of age that were diagnosed with SSTI and received ≥3 days of vancomycin therapy between April 30, 2024 and October 30, 2024. The gram-positive group was defined as receiving ≥3 days of vancomycin therapy with or without ≤24 hours of gram-negative antimicrobial therapy. The gram-negative group was defined as receiving ≥3 days of vancomycin therapy plus broad-spectrum gram-negative antibiotics for >24 hours (i.e., 3rd and 4th generation cephalosporins, fluoroquinolones, piperacillin/tazobactam, and carbapenems). The primary outcome was the requirement of additional intervention, including escalation of antimicrobial therapy, antibiotics reordered for an additional course, or prolongation of inpatient antimicrobial therapy secondary to the index infection. The secondary outcomes were 90-day *Clostridioides difficile* infection occurrence, total duration of inpatient antimicrobial therapy for the index infection, and development of a resistant pathogen 90-days following index antimicrobial therapy.

Results: A total of 66 patients were included in this study from a medical record review of 291 patients hospitalized with SSTI. Additional intervention was required in 2 of 10 (20%) patients in the gram-positive group and 13 of 56 (23.2%) patients in the gram-negative group. No patients in the gram-positive group required escalation of therapy or additional antibiotic courses; however, 2 (20%) patients experienced prolongation of inpatient antimicrobial therapy. In contrast, among patients in the gram-negative group, 1 (1.8%) patient required escalation of antimicrobial therapy, 1 (1.8%) patient had antibiotics reordered for an additional course, and 13 (23.2%) patients experienced prolongation of inpatient antimicrobial therapy. Patients in the gram-negative group had a numerically longer mean duration of inpatient antibiotic therapy (6.1 days) compared to those in the gram-positive group (5.1 days). Additionally, 1 patient in the gram-negative group developed a resistant pathogen 90-days following the index infection. Neither group experienced *Clostridioides difficile* infection within 90 days.

Conclusion: Empiric broad-spectrum gram-negative coverage in uncomplicated SSTIs was associated with a higher likelihood of prolonged inpatient antibiotic therapy and extended treatment duration, without a clear clinical benefit over gram-positive coverage alone. These findings suggest that targeted gram-positive therapy is sufficient for most uncomplicated SSTIs and that empiric broad-spectrum gram-negative coverage may contribute to unnecessary antibiotic exposure. Furthermore, these results align with IDSA SSTI guidelines, reinforcing the recommendation for gram-positive coverage for most uncomplicated SSTIs and highlighting the

potential risks of gram-negative broad-spectrum antibiotic use.

global: Y

9:50am – 10:05am L **Comparison of Emergency Care Center and Mobile Stroke Unit Fibrinolytic Times in Resistant Hypertension Requiring Nicardipine** Olympia 2

Moderators: Skyler Brown
Presenters: Kaitlyn Wallace
Evaluators: Kristen Keen

Comparison of Emergency Care Center and Mobile Stroke Unit Fibrinolytic Times in Resistant Hypertension Requiring Nicardipine

Authors: Kaitlyn Wallace, Andrew Yetka, Katleen Chester, Olivia Morgan

Background:

Nicardipine is an intravenous antihypertensive medication often used for acute ischemic stroke (AIS) patients with acute hypertension resistant to IV push labetalol and/or hydralazine. Nicardipine is supplied as a premixed bag in the Grady Health System (GHS) mobile stroke unit (MSU) but must be compounded at bedside or in the main inpatient pharmacy when supplied in the emergency care center (ECC). The aim of this study was to analyze whether access to premixed nicardipine administered in the MSU shortens time to fibrinolytic administration in patients with resistant hypertension.

Methods:

To analyze time to goal blood pressure for fibrinolytic therapy, a single center retrospective chart review was completed for patients treated with IV fibrinolytics within the Grady Health System for an AIS between May 10th, 2021, and October 14th, 2024. Patients treated with IV nicardipine prior to fibrinolytic administration in the ECC were compared to those treated similarly in the MSU. Patients younger than 18 years old, those presenting greater than 4.5 hours from symptom onset, and those who received a fibrinolytic for an indication other than stroke were excluded from analysis. The primary endpoint was time to fibrinolytic administration from the initial non-contrast computed tomography (CT) scan. Secondary endpoints included mean time to fibrinolysis from first antihypertensive medication, mean door (ECC) or arrival (MSU) to needle time, mean initial hypertensive blood pressure that excludes patient from fibrinolytic therapy, rate of symptomatic intracranial hemorrhage (ICH), and modified Rankin Scale (mRS) at discharge.

Results:

A total of 39 ECC patients and 3 MSU patients were included in the final analysis. The median age was 63.5 years old, 52% of patients were male, and 81% identified as black or African American. Almost all patients had hypertension at baseline and the median National Institute of Health Stroke Score (NIHSS) was 7.5. Labetalol was the most used adjunctive agent, having been utilized in 64.3% of patients, and nicardipine alone was utilized in 33.3% of patients. The primary outcome of median CT-to-needle time was 33 minutes for the ECC and 35 minutes for the MSU. Door/arrival, 1st antihypertensive, and nicardipine-to-fibrinolytic time were shorter favoring the MSU over ECC, though this was not statistically significant.

Conclusions:

Within Grady Health System, intravenous nicardipine is not used frequently enough prior to IV fibrinolytics to draw statistically significant conclusions regarding faster times to fibrinolytic therapy in the MSU vs ECC.

global: Y

9:50am – 10:05am L **Evaluation of Pediatric Medication Safety Mechanisms Within a Newly Implemented Electronic Health Record in the Emergency Department of an Adult Community Hospital** Parthenon 2

Moderators: Criag MacDonald
Presenters: Anne Thomas Hooper
Evaluators: Che Jordan

Title: Evaluation of Pediatric Medication Safety Mechanisms Within a Newly Implemented Electronic Health Record in the Emergency Department of an Adult Community Hospital

Authors: Anne Thomas Hooper, Anna Beth Bowles, Kevin Vanlandingham, Elizabeth Davidson

Background: Medication errors are a predominant factor in preventable patient harm. Pediatric patients are especially vulnerable due to unique medication dosing and administration principles. Electronic Health Record (EHR) systems, designed primarily for adult populations, can fail to detect errors in pediatric medication orders. The fast-paced environment, use of verbal orders, and critical nature of patients are factors that further increase risk of medication errors in the emergency department. This study aims to assess the efficacy of EHR safety mechanisms in identifying pediatric medication errors using a computerized provider order entry (CPOE) system in an adult hospital emergency setting.

Methods: The Plan-Do-Study-Act (PDSA) methodology was used to evaluate and adapt EHR safety mechanisms for quality improvement of pediatric medication safety in CPOE. A literature review was used to identify gaps in pediatric medication safety of the EHR and CPOE within high risk areas of hospital organizations. Resources such as the KIDs List, National Pediatric Readiness Program, and the Leapfrog evaluation tool provided the framework for the development of test questions. The "Do" phase involved ordering medications on test patients that were expected to trigger a safety alert. Questions to assess current medication safety alerts were based on three categories: weight-based dosing, maximum recommended dosing, and miscellaneous. Miscellaneous questions included incorrect routes, forms, and excipients. The “Study” portion involved recording results and analysis of the final endpoints. The primary endpoint is the frequency of medication order entry errors. The secondary endpoint was the detection frequency of medication errors within the categories. A “pass” was recorded if an appropriate alert populated and a fail was recorded if an alert was undetected based on the predetermined questions. During the “Act” phase, findings were assessed and changes implemented to the EHR where feasible.

Results: In Progress

Conclusion: In Progress

global: Y

9:50am – 10:05am L **The gaps in guideline-directed medical therapy associated with 30-day readmission in patients with heart failure** Parthenon 1

Presenters: Teya Klein
Evaluators: Katie Coffee, Lindsay Reulbach

Title:

The gaps in guideline-directed medical therapy associated with 30-day readmission in patients with heart failure

Author:
Teya Klein, PharmD
PGY1 Pharmacy Resident
St. Joseph's/Candler
Kleintey@sjchs.org
Co-Investigators:
Ashley G. Woodhouse, PharmD. BCACP, CDTM
David Yi, Pharmacist candidate 2025

Objective: This research project aims to investigate the gaps in guideline-directed medical therapy for patients with heart failure that have been readmitted to St. Joseph's/Candler hospital within 30 days and their utilization of a follow up outpatient appointment prior to readmission.

Background:

Heart failure poses a major public health challenge, marked by high morbidity, mortality, and healthcare costs. Hospital readmissions remain common despite advancements in guideline-directed medical therapy (GDMT)1,2. Key GDMT agents include Angiotensin converting enzyme inhibitors, Angiotensin receptor blockers, beta-blockers, mineralocorticoid receptor antagonists, Sodium-glucose cotransforter-2 (HFpEF) and mildly reduced ejection fraction (HFmrEF)3. CMS initiatives emphasize follow-up care to improve GDMT adherence and reduce readmissions. This study explores these factors to enhance patient outcomes and inform heart failure care practices.

Methods:

This single-center, retrospective study analyzed heart failure (HF) patients readmitted to St. Joseph's/Candler (SJ/C) hospital within 30 days between December 1, 2023, and June 30, 2024. Chart reviews identified adult patients using ICD-10 codes and examined their utilization of follow-up outpatient care before readmission. Records were reviewed to determine if patients attended a transition of care (TOC) visit at an SJ/C location, including hospital/provider calls and visits with primary care or cardiologists or displayed gaps in GDMT. Medication regimens were evaluated for gaps in GDMT for patients with heart failure at TOC if applicable and prior to readmission.

Results:

Among the 116-heart failure patients readmitted within 30 days, 28 (24.1%) had a transition of care appointment, while 88 (75.9%) did not. Of those who had a transition of care appointment, 12 were within the hospital network, 16 were outside the network, and only 6 had no gaps in guideline-directed medical therapy. Among the 88 patients without a transition of care call only 5 were within the network. The primary endpoint analysis showed no statistically significant association between transition of care follow-up and if patients were on GDMT or not, with a p-value of 0.88. For the secondary outcome, pharmacist-led TOC calls were associated with better GDMT adherence. 7 patients received a transition of care call from a pharmacist, and all were on appropriate guideline-directed medical therapy. However, all 7 patients were still readmitted within 30 days. The reasons for readmission among these patients were hypoxia (4), hypotension (1), shingles outbreak (1), and cerebrovascular accident (1), suggesting that factors beyond guideline-directed medical therapy adherence contributed to their readmission.

Conclusions:

This study found no statistically significant relationship between TOC follow-up, GDMT adherence, and 30-day readmission rates in heart failure patients. While gaps in GDMT were common, particularly among those without TOC follow-ups, the lack of statistical significance suggests that other factors may contribute to readmission. The secondary outcome highlights that even patients with pharmacist-led TOC calls and no GDMT gaps experienced

readmission, often due to non-cardiac causes. These findings suggest that optimizing GDMT alone may not be sufficient to reduce readmissions, and a more comprehensive approach addressing other clinical and social factors may be necessary.

global: Y

9:50am – 10:05am

1 **Association Between Time-to-Therapeutic Tacrolimus Concentrations and Acute Rejection Following Heart and Kidney Transplant** Athena J

Moderators: Janae Townsend
Presenters: Raymond Lin
Evaluators: Tabitha Carney

Title: Association Between Time-To-Therapeutic Tacrolimus Concentrations and Acute Rejection Following Heart and Kidney Transplant

Authors: Raymond Lin, Kwame Asare, Victoria Burnette

Introduction: Available evidence illustrates that greater time-in-therapeutic range tacrolimus therapy correlates with less acute rejection. There is minimal available evidence demonstrating that faster achievement of therapeutic tacrolimus concentrations is associated with better outcomes in terms of graft rejection and graft loss. Patients are at the highest risk of acute allograft rejection during the first 6 months post-transplant, necessitating more intense immunosuppression early on after transplant. This intense immunosuppression puts patients at risk for opportunistic infections such as Pneumocystis jirovecii pneumonia (PJP), cytomegalovirus (CMV), urinary tract infections (UTI), BK virus, etc. Tacrolimus is the first-line calcineurin inhibitor due to superior efficacy compared to cyclosporine. Major adverse events include nephrotoxicity, and neurotoxicity (seizures, tremors, paresthesias, headache, PRES, AMS). The purpose of this study was to evaluate incidence of biopsy proven acute rejection (BPAR) and/or graft failure in patients who achieved therapeutic tacrolimus concentrations <10 days after medication initiation compared to patients who achieved therapeutic tacrolimus concentrations >10 days after medication initiation.

Methods: This study was a single center, retrospective chart review of adult patients admitted to Ascension Saint Thomas Hospital West (ASTHW) for heart and/or kidney transplant who received tacrolimus as part of maintenance immunosuppression between August 1, 2022 and September 1, 2023. Patients who were pregnant or incarcerated were excluded. Patients were divided into two groups based on the time-to-therapeutic range tacrolimus concentrations following treatment initiation: < 10 days or > 10 days. The primary outcome was incidence of BPAR and/or graft failure <6 months following heart and/or kidney transplantation. Secondary outcomes included incidence of infection, neurotoxicity, nephrotoxicity, and hospital readmission at 6 months post-transplant.

Results: A total of 99 patients were included in our analysis, of whom 48 were stratified into the achieved therapeutic tacrolimus concentrations <10 days after medication initiation group and 51 into the achieved therapeutic tacrolimus concentrations >10 days after medication initiation group. The primary outcome of BPAR and/or graft failure occurred in 10 (10%) patients, with 4 patients in the <10 days group and 6 patients in the >10 days group (P= 0.74). There were no statistically significant differences between the groups in occurrence of CMV (8% vs. 8%, P> 0.99), UTI (8% vs. 16%, P= 0.359), BK virus (4% vs. 2%, P= 0.61), other treated bacterial, viral, or fungal infections (33% vs. 25%, P= 0.392), tremor (29% vs. 24%, P= 0.524), acute kidney injury (54% vs. 65%, P= 0.286), or readmission at 6 months (33% vs. 33%, P> 0.99).

Conclusion: In this study of kidney and/or heart transplant recipients receiving tacrolimus as maintenance immunosuppression, there were no statistically significant differences in rates of BPAR and/or graft failure, infection, neurotoxicity, nephrotoxicity, or readmission. Future studies evaluating time-to-therapeutic range should consider the varying time-in-therapeutic ranges.

global: Y

10:10am – 10:25am

Evaluation of a Clinical Pharmacist-Led Service to Facilitate Transitions of Care for COPD within an Integrated VA Healthcare System Athena J

Moderators: Janae Townsend
Presenters: Owen C. Bradford
Evaluators: Tabitha Carney

Owen C. Bradford, PharmD, MSN
Birmingham VA Health Care System
700 19th St. S - Birmingham, AL 35233
Owen.Bradford@VA.gov

Title:
Evaluation of a Clinical Pharmacist-Led Service to Facilitate Transitions of Care for COPD within an Integrated VA Healthcare System

Authors:
Owen C. Bradford
Whitney White
Caitlin Brown

Background/Objective:
Previous implementations of pharmacist-led transitions of care services have shown improvement in clinical and economic outcomes across numerous disease states. Although chronic obstructive pulmonary disease (COPD) is a progressive disease state, COPD-related morbidity is largely modifiable through optimal medication utilization and adherence. The objective of this study is to evaluate a new clinical pharmacist-led COPD transitions of care service within an integrated VA healthcare system in order to determine its impact on utilization of guideline-directed medication therapy and associated measures.

Methods:
This QI study will evaluate data from hospital follow-up visits for patients admitted with a diagnosis of a COPD exacerbation. Patients will be identified based on referral before hospital discharge. Post-discharge follow-up visits will be conducted via telephone, video, or face-to-face format.
A retrospective chart review will be performed to collect data related to completion of pharmacist interventions as well as clinical and economic outcomes. Pharmacist interventions may include successful medication reconciliation, patient education, modification of COPD pharmacotherapy, actions related to vaccination status or smoking status, etc. Clinical measures may include utilization of guideline-directed medication therapy, CAT and mMRC scores, smoking cessation status, and vaccination status. Economic measures may include formulary status of COPD therapies, total monthly cost of COPD therapies, etc.
These measures will serve as the data source for determining primary and secondary endpoint results. The primary endpoint for this study will be the change in utilization of guideline-directed medication therapy (GDMT). Secondary endpoints will include change in CAT scores, change in mMRC scores, and change in vaccination status.

Results
A total of 7 patients were included during the study period (December 2024 through March 2025). All 7 patients were classified as GOLD group E based on hospitalization for exacerbation. The average time from hospital discharge to initial follow-up visit was 36 days. During these visits, pharmacists completed interventions including medication reconciliation, patient education, pharmacotherapy optimization, and actions related to smoking cessation and vaccination. Following these visits, adherence to guideline-directed medication therapy (GDMT) improved from 4/7 patients (57%) to 7/7 patients (100%). Of the 5 patients who were not up-to-date on recommended vaccinations, all were offered vaccination. 1 patient

received the RSV vaccine during the visit, 1 denied all vaccinations, and 2 preferred to follow up with their primary care provider for vaccination. Four patients were identified as candidates for smoking cessation interventions. All 4 of these patients received counseling on smoking cessation, and 2 initiated or continued on nicotine replacement therapy. The average 30-day cost of pharmacotherapy increased from $48.87 to $66.28, which was attributed to the addition of guideline-driven COPD therapies. Formulary adherence remained 100% both pre- and post-visit.

Conclusion:

The implementation of this pharmacist-led transitions of care service for patients hospitalized with COPD exacerbations led to improved adherence to GDMT and enhanced delivery of preventive care. Pharmacist-led clinical interventions have the potential to positively impact long-term patient outcomes, including symptom control and reduction in hospital readmissions. While the small sample size limits broader application, this pilot demonstrates the feasibility and potential clinical and economic value of integrating pharmacists into transitions of care services for COPD management in the VA setting.

10:10am – 10:25am B **Comparing Fall Risk in Older Adults on Chronic Opioids versus Buprenorphine Therapy** Athena C

Moderators: Alexander Tunnell
Presenters: Garrett Allegra
Evaluators: Amanda Moyer
Title: **Comparing Fall Risk in Older Adults on Chronic Opioids versus Buprenorphine Therapy**

Authors: A. Garrett Allegra, Olivia Caron, Tasha Woodall

Objective: To analyze potential differences in fall risk in older adults on chronic full-agonist opioid therapy versus chronic buprenorphine therapy

Self Assessment Question: What correlation, if any, was seen in this study between buprenorphine use and fall risk reduction when compared to full-agonist opioids?

Background: Minimizing fall risk in older adults is a pillar of geriatric medicine, and pharmacists play an important role in decreasing the use of fall-risk-increasing drugs (FRIDs) in this population1. One such class of medications is opioids, which have been shown to significantly increase fall risk, injury from falls, and fractures in older adults2. Some data suggest that buprenorphine, a partial opioid agonist, increases fall risk as well; however, buprenorphine and full-agonist opioids have not been directly compared3. The objective of this study was to examine the rate of positive fall screenings among older adults prescribed opioids versus those prescribed buprenorphine.

Methods: Eligible patients met the following inclusion criteria: family medicine patient at Mountain Area Health Education Center (MAHEC) in Asheville, NC; age ≥ 65 years at time of fall screen; and active buprenorphine, full-agonist opioid, or partial-agonist opioid on medication list at time of fall screen. Patients taking both buprenorphine and a full-agonist opioid and patients whose opioid was prescribed for an acute injury related to a fall were excluded. A retrospective chart review of eligible patients was conducted to compare the rate of positive fall screenings among patients who take chronic opioids versus patients who take chronic buprenorphine. Data collected during these chart reviewed included opioid product on medication list, duration of therapy, milligram morphine equivalents (MMEs), fall risk screening score, renal function, and concomitant FRIDs for comparison.

Results: A pre-existing registry of 733 patients who take chronic opioids was analyzed to identify 211 older adults who were taking chronic opioid therapy at the time of their most recent fall screening. An additional registry was compiled listing 80 patients taking chronic buprenorphine. This list was analyzed via chart review to identify 29 older adults who were taking buprenorphine at the time of their most recent fall screening. Data analysis was performed and yielded no significant difference in positive fall risk screening rates between individuals taking buprenorphine and those taking full agonist opioids (69% vs 58%, p-value not reported). There was also no difference seen in rates of injuries from fall between groups (24% for buprenorphine, 25% for opioids). There was a statistically significant difference in fall rate between all female patients enrolled in the trial (65%) compared to male patients (48%, p=0.037) and between all patients under 75 years old (52%) and those 75 years or older (69%, p=0.026).

Conclusion: This trial showed no statistical difference in fall risk between buprenorphine and full agonist opioids in adults aged 65 years or older. There was, however, a significant increase in fall risk among

women and patients 75 years or older who take an opioid product of any kind. The association between various opioid products and fall risk among subpopulations warrants further investigation with larger sample sizes.

global: Y

10:10am – 10:25am B **Evaluating the Implementation of a Standardized Process for Nursing-Led Continuous Glucose Monitoring Patient Education for Home-Based Primary Care** Athena D

Moderators: Brandi Dahl
Presenters: Madison Wilson, Madison Wilson
Evaluators: Naomi Yates

Title: Evaluating the Implementation of a Standardized Process for Nursing-Led Continuous Glucose Monitoring Patient Education for Home-Based Primary Care

Authors: Madison Wilson, Courtney Hines, Brittany Melville

Objective: Evaluate the change in nursing confidence following implementation of a standardized process for CGM education for HBPC patients

Self-Assessment Question: True or False? There was an increase in nursing confidence following implementation of a standardized process for initial CGM patient/caregiver education for patients in HBPC

Background: Continuous glucose monitoring (CGM) devices are essential tools in diabetes management. Education is critical for effective CGM use and monitoring. At the Salisbury Veterans Affairs Health Care System (SVAHCS), CGM education for Home Based Primary Care (HBPC) patients is often completed by HBPC nurses, but there is no current standardized process to guide consistent and effective CGM instruction and monitoring. This quality improvement project aims to implement a standardized process for nursing to deliver CGM education and monitoring in the home and evaluate the change in nursing confidence and documentation following this.

Methods: This quality improvement project will provide HBPC nurses education on a standardized process for CGM education, device setup, interpretation and collection of glucose data, and troubleshooting. SVAHCS HBPC patients who meet criteria for CGM implementation or those already using one, along with HBPC RNs who attend training on the standardized process for CGM education and monitoring will be included. Data collection will be completed from August 1st, 2024 and June 30th, 2025 and will include results of pre- and post-survey questionnaires, nurse documentation of initial CGM education, CGM reader results, and alert via note co-signature to Clinical Pharmacist Practitioner (CPP). The primary objective is to evaluate the change in nursing confidence following implementation of a standardized process for CGM education for HBPC patients. Secondary objectives include evaluating initial and follow-up CGM education documentation, monitoring, and CPP alerts. Descriptive statistics will be used to assess outcomes.

Results: For the primary objective, 10 RNs completed the pre-survey and 8 completed the post-survey. There was a mean increase between 0.8-2.1 in RN confidence for all 5 standardized questions. For documentation of initial CGM education, there were 2 patients with CGM education prior to RN training, 1 of which was documented and the other not being documented. Following education, there were 2 new readers started with a 100% documentation rate. There was a 14% increase in documentation of CGM reader results following education. There was a 21% increase in documentation of average BG for the past 7 days, 19% increase for the past 14 days and 39% increase for the past 30 days. For documentation of average BG based on time of day, 0% had documented this prior to the education and 25% following education. Documentation for time in target, low glucose events, sensor usage, and alert via co-signature to CPP increased post-education between 5%-44%, with sensor usage and alert of note via co-signature to CPP showing the largest increase in documentation following education.

Conclusion: Nursing confidence increased for all survey questions following implementation of a standardized process for initial CGM patient/caregiver education for patients in HBPC and RNs utilized template for CGM initial education documentation. Additionally, documentation of CGM reader results in all data points showing an increase following education. Surprisingly, there was an overall low documentation rate for low glucose events. Education session provided was effective in increasing nursing confidence for initial CGM patient/caregiver education for patients in HBPC and educational intervention increased the documentation of CGM reader results

by HBPC RNs.

global: Y

10:10am – 10:25am C **Factors Predicting Ejection Fraction Decline with Mavacamten in Obstructive Hypertrophic Cardiomyopathy** Athena B

Moderators: Andi Ray
Presenters: Katie Williams
Evaluators: Kyle Starling

Authors' names: Katie Williams, Justin Joy, Stuart Pope, Ozlem Bilen, Matthew Gold, Byron Williams III

Background/Purpose: To evaluate the real-world incidence of left ventricular ejection fraction (LVEF) decline to <50% and identify predictors associated with reduced LVEF in patients receiving mavacamten for obstructive hypertrophic cardiomyopathy at an academic medical center.

Methodology: This is a single-center, retrospective chart review of adult patients diagnosed with obstructive hypertrophic cardiomyopathy, who have received mavacamten therapy for at least 3 weeks at the Emory Heart and Vascular Clinic from May 1, 2022, to September 30, 2024. Eligible patients must have a baseline left ventricular outflow tract gradient (LVOT) >30 mmHg and available echocardiogram data at both baseline and post-treatment initiation. Patients with incomplete medical records will be excluded. A univariate logistic regression analysis was performed to identify predictors associated with EF decline.

Results: A total of 54 patients met the inclusion criteria for the IRB-approved study. Among these, five patients (9.3%) discontinued mavacamten therapy[JJ4] . Three patients (5.6%) had an incidence of EF decline <50% during mavacamten therapy; two of them (66.7%) discontinued mavacamten. Patients that discontinued mavacamten had similar EF at baseline than those who continued mavacamten (51.2% vs. 63.6%; P=0.093). Similarly, patients that discontinued mavacamten had similar EF post mavacamten treatment than those who continued mavacamten (52.7% vs. 60.9%; P= 0.127). No factors were associated with EF decline were identified in the initial analysis.

Conclusions: The study revealed that the majority of patients did not have a EF decline <50% while on mavacamten for hypertrophic cardiomyopathy. Given the inconclusive findings, further exploratory analyses will be conducted to identify potential predictors of EF decline.

Presentation Objective: Identify key factors that may contribute to a decrease in ejection fraction in patients taking mavacamten for hypertrophic cardiomyopathy.

global: Y

10:10am – 10:25am R **Evaluation of Venous Thromboembolism Prophylaxis in Conjunction with Low Dose Rivaroxaban in Hospitalized Patients** Athena G

Moderators: Spencer Roper
Presenters: Kara Bamberger
Evaluators: Vince Buttrick

Title: Evaluation of Venous Thromboembolism Prophylaxis in Conjunction with Low Dose Rivaroxaban in Hospitalized Patients

Authors: Kara Bamberger, Matt Wallace, Regan Wade

Background: Acute venous thromboembolism (VTE) is a common, preventable complication in hospitalized patients that contributes to significant morbidity and mortality. Current guidelines recommend the use of unfractionated heparin (UFH), low molecular weight heparin (LMWH), or fondaparinux for pharmacologic prophylaxis in hospitalized patients at risk of developing VTE. Alternatively, rivaroxaban, an oral factor Xa inhibitor, can be utilized as VTE prophylaxis at a dose of 10 mg daily. Rivaroxaban is also approved for the indications of stable coronary artery disease (CAD), recent acute coronary syndrome (ACS), and peripheral artery disease (PAD) at a lower dose of 2.5 mg twice daily, in conjunction with aspirin at doses less than 100 mg daily. However, its VTE prophylactic benefits at this dosing in hospitalized patients is unclear, making the need for additional pharmacologic VTE prophylaxis uncertain. At Vanderbilt University Medical Center (VUMC), the practice for mitigating VTE risk among these patients is not standardized.

Methods: A retrospective, single-center cohort study was conducted to evaluate the safety and efficacy of administering pharmacologic VTE prophylaxis in conjunction with low dose rivaroxaban in hospitalized patients. Patients were eligible for inclusion if they were 18 years of age or older, admitted to VUMC for at least 24 hours, administered at least one dose of low dose rivaroxaban, and had an indication for VTE prophylaxis based on a PADUA prediction score of ≥4. Patients were excluded if they had established an VTE event prior to inclusion, were receiving or had an indication for therapeutic anticoagulation, or a contraindication to VTE prophylaxis. The primary outcome evaluated was a composite of new VTE events during hospitalization and clinically significant bleeding events. Secondary outcomes evaluated were hospital length of stay and the time to initiation of VTE prophylaxis after admission.

Results: In progress

Conclusions: In progress

global: Y

10:10am – 10:25am R **Impact of Intravenous Push Administration of Levetiracetam in the Emergency Department** Athena H

Moderators: Jenna Cox
Presenters: Allison Kump
Evaluators: Christen Freeman

Title: Impact of Intravenous Push Administration of Levetiracetam in the Emergency Department

Authors: Allison Kump, Katlynn Bailey, Aubrie Hammond, Katie McLaurin, Samantha Pizzurro, Regan Porter

Objective:

global: Y

10:10am – 10:25am R **Time-to-Target Mean Arterial Pressure: Weight-Based versus Non-Weight-Based Norepinephrine in Critically Ill Patients with Septic Shock** Athena I

Moderators: Kayla Lawlor
Presenters: Kristen Wardell
Evaluators: brian meister

Title: Time-to-Target Mean Arterial Pressure: Weight-Based versus Non-Weight-Based Norepinephrine in Critically Ill Patients with Septic Shock

Authors: Kristen Wardell, Pharm.D., Brian Hairston, MBA, Pharm.D., Katie Schipper, Pharm.D., BCCCP, Jamie Wagner, Pharm.D., BCIDP

Objective: To determine if there is a difference in time-to-target mean arterial pressure of critically ill patients with septic shock on weight-based norepinephrine dosing or non-weight-based dosing.

Background: The optimal norepinephrine dosing strategy, weight-based vs. non-weight-based, in septic shock remains controversial with no clear consensus in current guidelines. St. Dominic Jackson-Memorial Hospital has historically utilized non-weight-based dosing (non-WBD) but transitioned to weight-based dosing (WBD) in May 2022. However, WBD may lead to excessively high doses in obese patients, which can oversaturate adrenergic receptors. These doses may also cause an increased risk of adverse effects, such as peripheral ischemia and acute kidney injury. The impact of this transition on clinical outcomes remains unclear.

Methods: This quasi-experimental study included adult patients admitted to St. Dominic Jackson-Memorial Hospital from January 1, 2019, to December 31, 2019, and from January 1, 2023, to December 31, 2023, who required intravenous norepinephrine for presumed septic shock. Patients were identified via electronic surveillance software. Inclusion criteria were age ≥18 years, hospital admission within the specified study periods, and norepinephrine administration. Exclusion criteria included norepinephrine duration <1 hour, prior administration of another vasopressor, norepinephrine use for non-septic shock indications, or COVID-19 diagnosis during admission. Collected data included baseline demographics, quick Sepsis-Related Organ Failure Assessment (qSOFA) score, Glasgow Coma Scale (GCS) score, initial laboratory parameters (serum lactate, creatinine, bilirubin, platelet count, white blood cell count), ventilator status, oxygenation parameters (partial pressure of oxygen [PaO_2]/fraction of inspired oxygen [FiO_2]), first and last recorded intensive care unit (ICU) mean arterial pressure (MAP), and norepinephrine dose at goal MAP.
The primary outcome of this study was the time (in minutes) to achieve the goal MAP. Secondary outcomes included duration of norepinephrine therapy, ICU length of stay, development of an acute kidney injury (AKI), in-hospital mortality within 30 days of norepinephrine initiation, and norepinephrine dose at the initiation of an additional vasopressor or stress-dose steroids.

Results: In progress.

Conclusion: In progress.

global: Y

10:10am – 10:25am | **Impact of a Practice Advisory Alert to Reduce the Duration of Fluoroquinolones Prescribed at Discharge** Athena A

Moderators: Caren Azurin
Presenters: Gresham Grace Hindman, Gresham Hindman
Evaluators: Caroline Jozefczyk

Authors: Gresham Hindman; Hannah G Harpe; Haley L Meek; Steven Le

Background: Fluoroquinolones are one of the most frequently prescribed antibiotics, contributing to developing resistance to gram-negative organisms. At McLeod Health, our antibiograms show poor susceptibility of Escherichia coli and Pseudomonas aeruginosa to levofloxacin. With poor susceptibility, a growing area of concern is prolonged duration of fluoroquinolones. To address this, a practice advisory alert was created to encourage providers to consider the days of equivalent antibiotics received while inpatient when prescribing a fluoroquinolone at discharge. The purpose of this study was to assess the impact of this alert on duration of fluoroquinolone therapy prescribed at discharge from McLeod Health.

Methods: This was an institutional review board approved retrospective, multi-center, single-system, pre-post cohort study of adults discharged on levofloxacin or ciprofloxacin from any McLeod Health facility. Subjects were identified utilizing a report from the electronic health record. Two reports were generated between August 2024 and February 2025, one prior to activation of the alert and the second post activation. Data was collected via an electronic, password protected spreadsheet accessible only to the primary study investigators. Patients were excluded if they were pregnant, received a fluoroquinolone prescription for prophylactic/suppressive use, or diagnosed with a severe/complicated infection. Data collection endpoints included patient demographics, infection type, antimicrobial management, infectious disease consultation, prescriber credentials, and readmission within 30 days with a Clostridioides difficile diagnosis. The primary outcome measure was incidence of inappropriate duration of fluoroquinolones prescribed at discharge according to current guidelines or infectious disease specialist recommendations, while accounting for inpatient antimicrobial use with equivalent coverage. The secondary outcome measure was the incidence of patients discharged on a fluoroquinolone and subsequently readmitted requiring treatment for Clostridioides difficile infection within 30 days of discharge. Derived from previous literature, a sample size of 540 patients was deemed necessary to obtain 80% power with an alpha of 0.05 to observe a 20% reduction of inappropriate durations prescribed at discharge.

Results: Two hundred participants were included in the study. Baseline characteristics were similar between both groups, however there was a difference in the infection type. The pre-practice advisory group had a higher incidence of urinary tract infections (38%) and intraabdominal infections (32%), whereas the post- practice advisory group had a higher incidence of pneumonias (40%). Of the 200 participants included, 151 (75.5%, 72 pre; 79 post) received inpatient antibiotic coverage that was considered equivalent to fluroquinolones. The most common agent used was ceftriaxone (pre 50% (36/72); post 56% (44/79)). The primary outcome, incidence of inappropriate duration of fluoroquinolones prescribed at discharge, occurred in 44% of patients in the pre-practice advisory group and 24% of patients in the post-practice advisory group, with an overall reduction of inappropriate prescribing by 20% (p=0.0028). Readmission in the pre- and post- groups were 12% and 6% respectively, however there was no incidence of Clostridioides difficile infections.

Conclusions: This retrospective cohort study demonstrated a statistically significant reduction in inappropriate durations of outpatient fluoroquinolone therapy through implementation of a practice advisory alert that notifies prescribers to consider the duration of antibiotic therapy received inpatient when prescribing fluoroquinolones at discharge. Our estimated reduction of inappropriate duration of therapy was 20% based upon a previous study, which we was met in this study. There was a statistically significant difference regarding the most prominent infection type between the groups, however this is attributed to the time of year data was collected from and respiratory infections being more common in the winter months. Overall, the practice advisory was effective and could potentially be expanded to other antibiotics in the future.

global: Y

10:10am – 10:25am L **EVALUATON OF EXTENDED POST-OPERATIVE ORAL TRANEXAMIC ACID AFTER TOTAL KNEE AND HIP ARTHROPLASTY** Olympia 2

Moderators: Skyler Brown
Presenters: Kayla Dodson
Evaluators: Kristen Keen

EVALUATON OF EXTENDED POSTOPERATIVE ORAL TRANEXAMIC ACID AFTER TOTAL KNEE AND HIP ARTHROPLASTY

Kayla Dodson, Alex Fagan, Shelby Hood, Sterling Torian
TriSt**ar Centennial Medical Center – Nashville, TN**

Background: Perioperative tranexamic acid has become the standard of care in total joint arthroplasty, aiming to reduce total blood loss and postoperative blood transfusions. Administered either intravenously and/or topically during surgery, tranexamic acid is believed to balance the fibrinolytic and procoagulant systems. Furthermore, its anti-inflammatory properties may offer additional benefits postoperatively for patients undergoing total knee arthroplasty, such as enhanced range of motion, commonly referred to as flexion. The use of extended courses of oral tranexamic acid postoperatively is an emerging therapy, though its clinical utility remains uncertain due to limited evidence regarding safety and efficacy. The purpose of this study was to evaluate the use of an extended course of postoperative oral tranexamic acid and establish a standardized protocol for its use in total knee and hip arthroplasty.

Methods: This was a single-center retrospective cohort study conducted through chart review from May 1, 2023 to July 1, 2024. Patients were identified based on the International Classification of Diseases-9 and International Classification of Diseases-10 codes for total knee or hip arthroplasty at admission. Patients who underwent elective knee or hip arthroplasty within the study timeframe were included. Exclusion criteria consisted of emergent or non-elective arthroplasty, documented religious preference that precludes use of blood products, tranexamic acid use on admission, end stage renal disease, and incarcerated patients. The primary outcome was the percentage reduction in hematocrit, calculated by subtracting the lowest postoperative hematocrit within 48 hours from the preoperative hematocrit. Secondary outcomes included the frequency of blood transfusions, flexion in total knee arthroplasty (TKA), and incidence of thrombotic complications.

Results: A total of 229 patients were screened; 221 patients met inclusion criteria and 8 patients were excluded due to non-elective/emergent procedure. Baseline demographics were similar between groups. No significant difference was observed in reduction of hematocrit among those who received a course of extended postoperative oral tranexamic versus those who did not (mean difference -0.23; 95% CI (-1.27 – 0.8), p=0.660). The flexion degree of change in TKA was statistically significant in patients who did not receive oral TXA (mean difference 3.9; 95% CI (0.76 – 7), p=0.015). One patient developed a deep vein thrombosis in the non-oral TXA group.

Conclusions: There was no observed difference in reduction of hematocrit in patients who received an extended course of postoperative oral tranexamic versus those who did not. There was also no difference in other clinically relevant outcomes including improved flexion in TKA, blood transfusion requirements and thrombotic complications.
This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

global: Y

10:10am – 10:25am L **Safety evaluation of apixaban indicated for venous thromboembolism in patients with acute kidney injury** Parthenon 2

Moderators: Criag MacDonald
Presenters: Randall Parat
Evaluators: Che Jordan

Title: Safety evaluation of apixaban indicated for venous thromboembolism in patients with acute kidney injury

Authors: Randall Parat, Mitchell Hutson, J. Morgan Knight, Meg Francis, Skyler Brown

Background: Apixaban, a factor Xa inhibitor used in multiple thromboembolic conditions, is approximately 30% renally eliminated and may accumulate in acute kidney injury (AKI). A dose reduction is commonly utilized in patients taking apixaban for atrial fibrillation, however, no current dose reduction is accepted for the treatment of venous thromboembolism (VTE). This study aimed to compare the frequency of major bleeding events in patients with or without acute kidney injury, who are taking apixaban for the treatment of acute or chronic venous thromboembolism.

Methods: This retrospective cohort study included patients admitted from January 2019 to December 2023 at a large academic medical center in Tennessee, USA. Two sets of patient encounters were gathered via chart documentation and ICD-10 codes. The control group with encounters containing documented VTE on apixaban, and the AKI group with encounters containing documented VTE on apixaban with AKI. The primary outcome evaluated was the incidence of a major bleeding event within three days of four consecutive apixaban doses. Secondary outcomes included the incidence of non-major bleeding events.

Results: 195 patients were included in this study, 103 in the control group and 92 in the AKI group. The incidence of major bleeding in the control group was 5 (4.9%) vs 3 (3.3%) in the AKI group ($p = 0.724$). Within the sample, 145 (74.4%) patients had an acute pulmonary embolism or acute deep vein thrombosis and the median number of apixaban doses including both loading and maintenance doses was 9 (IQR: 6-15). Within the AKI group, stage 1 AKIs were the most common occurring in 42 (45.7%) patients with a total median duration of AKI being 4 days (IQR: 2-7). The median length of stay was 9 days (IQR: 5-18).

global: Y

10:10am – 10:25am L **Safety of Initial Fluid Bolus in Overweight and Obese Patients with Sepsis in the Emergency Department: A Retrospective Review** Parthenon 1

Presenters: Aana Hampton-Ashford

Evaluators: Katie Coffee, Lindsay Reulbach

Safety of Initial Fluid Bolus in Overweight and Obese Patients with Sepsis in the Emergency Department: A Retrospective Review

Aana Hampton-Ashford, Caroline Cox

Background:
Sepsis is a severe condition caused by an uncontrolled inflammatory response to infection. Approximately 80% of patients with sepsis receive initial treatment in the emergency department (ED). The Surviving Sepsis Guidelines recommend an initial fluid bolus of 30 mL/kg. However, these guidelines do not provide additional recommendations for obese patients. The US Centers of Medicare and Medicaid Services state that ideal body weight may be used to calculate the 30 mL/kg fluid bolus for obese patients with a body mass index (BMI) of ≥ 30 kg/m2. The purpose of this study aimed to compare the incidence of fluid overload between normal or overweight patients and obese patients that presented to the emergency with sepsis and received a 30 mL/kg fluid bolus.

Methods:
This study was a retrospective cohort chart review across emergency departments within the Wellstar Health System from January 1, 2024, to July 24, 2024. Adult patients were included if they presented to the ED, triggered a sepsis Best Practice Alert, and received a 30 mL/kg fluid bolus. Exclusion criteria included a BMI of less than 18.5 kg/m2, palliative care or withdrawal of care within 24 hours of arrival, transfer from outside hospital, pregnant and incarcerated patients, history of heart failure, diuretic use prior to arrival, chronic kidney disease stage 4 or 5, and liver disease. Patients were separated into two groups based on BMI. Group 1 included 97 patients categorized as normal weight or overweight with a BMI of 18.5-29.9 kg/m2. Group 2 included 97 patients categorized as obese with a BMI greater than or equal to 30 kg/m2. The primary outcome was the incidence of fluid overload. Fluid overload was defined as documentation of new pitting edema, crackles or anasarca within 24 hours, chest x-ray findings of pulmonary vascular congestion, pulmonary edema, and/or pleural effusion that is new compared to chest x-ray on admission, and/or loop diuretic administration or initiation of renal replacement within 24 hours. Secondary outcomes included mortality within 72 hours and hospital length of stay.

Results:
The study aimed to evaluate 194 patients, however only 165 patients met inclusion criteria. Patients in group 2 were most commonly excluded due to heart failure, prior diuretic use, and/or palliative care. This resulted in 97 patients in group 1 (BMI 18.5-29.9 kg/m²) and 68 patients in group 2 (BMI ≥30 kg/m²). Groups 1 and 2 had similar baseline characteristics, including age, BMI (25.6 kg/m2 vs. 37kg/m2, p=.70), gender distribution, height, race, and study site. However, differences were observed in infection sources, with urinary tract infections being more common in group 1.
There was no difference in the primary outcome of fluid overload between groups 1 and 2 (13.2% vs. 5.2%, p = 0.06). There was no difference between groups when comparing each individual component of the fluid overload definition. Secondary outcomes, including 72-hour mortality (5% vs. 4%, p = 0.15) and hospital length of stay (114 hours vs. 177 hours, p = 0.274), showed no significant difference.

Conclusion:
Despite concerns of increased fluid overload risk in obese patients receiving a 30 mL/kg sepsis fluid bolus, this study found no significant difference between BMI groups, likely due to similar baseline BMI. In this study, patient BMI groups were not different at baseline, possibly preventing an accurate comparison of

obese patients compared to normal and overweight patients receiving a weight-based fluid bolus for sepsis. To improve future research, groups should include patients with BMI less than 25 kg/m² and greater than 40 kg/m² to ensure meaningful BMI differences at baseline. This adjustment would better assess the impact of weight-based fluid boluses on sepsis management.

global: Y

10:10am – 10:25am P **OPIOID CONSUMPTION: THE IMPACT OF REVISIONS TO AN INPATIENT OPIOID ORDER SET**

Moderators: Don Tyson Olympia 1

Presenters: Eisha Ludtke

Evaluators: KIMM FREEMAN

OPIOID CONSUMPTION: THE IMPACT OF REVISIONS TO AN INPATIENT OPIOID ORDER SET

Eisha Ludtke, Lisa Scott, MaryAnn Birch
HCA Florida West Hospital-Pensacola, FL

Background/Purpose:

Investigate the impact of revisions made to an inpatient opioid order set on overall opioid consumption amongst hospitalized patients and education given to providers regarding the new order sets.

Methodology:

This single-center quasi-experimental study conducted at a 515-bed academic hospital with data collection beginning September 2024 and was continued until March of 2025. Patients were excluded if admitted to the labor and delivery unit, the intensive care unit, palliative care, or to the operating room. Patients with active malignancy, opioid use disorder, opioid reversal prior to admission, opioid tolerance, scheduled opioid use, pain management consults, contraindications or allergies to study drugs, incomplete pain scale documentation by nursing, or non-numerical pain scale orders were also excluded from this study. Cohort 1 consists of patients prescribed both opioids and non-opioids (acetaminophen or ibuprofen) outside the opioid order set. Cohort 2 includes patients prescribed analgesic medications from the revised opioid order set. Cohorts were identified through facility surveillance software reports. The study evaluates the frequency of opioid administration. The primary endpoint of this study evaluated the average MME administered per 24 hours of a patient's stay, while secondary endpoints included the number of times the available MME increased, the percentage of patients with breakthrough pain orders, the number of times an opioid for breakthrough pain was given divided by the inclusion time, the percentage of patients with a scheduled acetaminophen order, and the frequency a non-opioid was given for analgesia divided by inclusion time.

Results:

Baseline demographics between both cohorts, including age, sex, race, BMI, Charleston Comorbidity Index, surgical patient status, prior opioid use, presence of adjunctive pain medication, and length of stay, showed no statistical differences. For the primary endpoint, there were no statistical differences between cohort 1 and cohort 2 regarding the mean MME consumed by hospitalized patients per 24 hours of their stay, the number of times the MME increased throughout the stay, or the number of times an order for breakthrough pain was given, divided by the inclusion time (p-values: 0.9952, 0.5572, and 0.1121, respectively). The implementation of the order set increased the percentage of patients with a breakthrough pain order from 31% to 60%, demonstrating a statistically significant difference between pre- and post-intervention groups (p-value: 0.0031). An increase in the percentage of patients with a scheduled acetaminophen order from 19% to 88% post-intervention was observed (p-value: <0.0001). Lastly, there was a statistically significant increase in the frequency of either acetaminophen or NSAID administration for analgesia, divided by inclusion time, indicating more administrations of non-opioids in the post-intervention group (p-value: 0.0453).

Conclusions:

Despite the addition of a breakthrough pain (BTP) order, there was no statistical difference in average morphine milligram equivalents (MME) per day, although the number of BTP orders increased significantly. This increase was anticipated due to the prechecked BTP order in the new set, which physicians could uncheck if desired. Concerns about increased opioid consumption were unfounded, as BTP orders involved lower potency opioids compared to those for moderate or severe pain. The unchanged MME, combined with significant BTP order results, indicates that standardizing the order set improved overall pain control. While there was no statistical difference in early opioid administration, offering a lower potency BTP opioid may theoretically reduce early administrations due to uncontrolled pain. Scheduling acetaminophen led to better around-the-clock pain control and increased use of opioid-sparing agents. The prechecked scheduled acetaminophen order encouraged non-

opioid analgesia. Limitations include a restricted sample size due to the time required for implementation and education, and some providers' preference for custom order sets. A larger sample size and proper use of the new order set could demonstrate lower opioid use and greater utilization of opioid-sparing agents. Further data collection is needed to assess these outcomes. Potential confounders include cognitive issues and drug-seeking behavior, which could affect pain perception and reporting.

Presentation Objective:
Review the impact of a revised analgesic order set on opioid consumption, non-opioid analgesic use, early opioid administrations, dose increases, and morphine equivalent increases, while also exploring how these changes influenced patient care and treatment preferences for moderate to severe pain.

Best Contact for Follow Up: Eisha Ludtke, eisha.ludtke@hcahealthcare.com

global: Y

10:30am – 10:45am

Impact of dapagliflozin versus empagliflozin on renal function and diuretic response in patients with acute decompensated heart failure at a tertiary care community teaching hospital. Athena J

Moderators: Janae Townsend
Presenters: Manderrious Glenn
Evaluators: Tabitha Carney

Title: Impact of dapagliflozin versus empagliflozin on renal function and diuretic response in patients with acute decompensated heart failure at a tertiary care community teaching hospital.

Authors: Principle Investigator's name and department: Manderrious Glenn, PharmD PGY1 Pharmacy Resident, Wellstar Cobb Medical Center | Co-Investigator: Jaleesa Myers, PharmD, BCPS, BCCP Clinical Pharmacist, Wellstar Cobb Medical Center

Objective: To compare the diuretic response in patients with acute decompensated heart failure (ADHF) receiving dapagliflozin or empagliflozin.

Background: Sodium-glucose cotransporter 2 inhibitors (SGLT2is) have established efficacy and are standard of care in the treatment of chronic heart failure (HF). However, limited data exists comparing their effects on diuretic response and renal function in ADHF. Inadequate diuretic response in ADHF is associated with poor outcomes, and specific recommendations regarding the use of SGLT2is in this context are scarce. The purpose of this study is to compare the diuretic efficiency and safety of dapagliflozin versus empagliflozin in ADHF to address this gap in clinical knowledge.

Methods: This retrospective, observational cohort study was performed to evaluate the trends in diuretic response and renal function in patients with ADHF. Patients admitted to Wellstar Cobb Medical Center between May 1, 2023, and May 1, 2024, with a diagnosis of ADHF, age ≥18 years, and received either empagliflozin or dapagliflozin within 24 hours of hospitalization were included. Patients with systemic infection, end-stage renal disease on dialysis and not receiving diuretics, or hemodynamic instability were excluded. Data was collected on the first 100 patients to meet inclusion criteria within the specified time period. The primary outcome was diuretic response, defined as the change in weight in kg/[(total intravenous dose)/40 mg + (total oral dose)/80 mg furosemide or equivalent loop diuretic dose]. Secondary outcomes that were evaluated include length of hospital stay, incidence of worsening HF, incidence of worsening renal function, and 30-day mortality and readmission rates. Data was analyzed using t-tests for continuous variables and chi-square tests for categorical variables.

Results: The median diuretic response was 0.62 for dapagliflozin and 0.68 for empagliflozin (p=0.31), indicating no significant difference between the two agents. Secondary outcomes, including length of hospital stay (8.5 vs. 8.6 days, p=0.98), 30-day readmission rates (16% vs. 12%, p=0.56), and mortality (1 death in each group, p=1), were also comparable. Both agents demonstrated similar safety profiles, with no significant differences in adverse events such as hypotension, urinary tract infections, or acute kidney injury (AKI).

Conclusion: Dapagliflozin and empagliflozin appear equally effective and safe in managing ADHF, with comparable diuretic responses, hospital stay durations, and readmission rates. These findings support the use of SGLT2is in ADHF, regardless of the specific agent chosen. Future research should focus on prospective, multicenter studies to further validate these results and explore long-term outcomes.

10:30am – 10:45am B **Risk Factors related to Time in Therapeutic Range for Warfarin Patients in an Outpatient Cardiology Clinic** Athena D

Moderators: Brandi Dahl
Presenters: Anna Cooke, Anna Cooke
Evaluators: Naomi Yates

Title: Risk Factors related to Time in Therapeutic Range for Warfarin Patients in an Outpatient Cardiology Clinic

Authors: Anna Cooke, Ben Tabor, Marina Carter, Adam Pizzuti, Lauren Schultz

Objective: Determine which individual patient factors are associated with highter or lower time in therapeutic range related to warfarin therapy

Self-Assessment Question: Which individual patient factors correlate with a lower time in therapeutic range while on warfarin?

Background: Despite the emergence of new oral anticoagulants, warfarin remains a regularly utilized option for the prevention and treatment of venous thrombosis and thromboembolic events. While warfarin, a vitamin K antagonist, is an effective anticoagulant, it has several limitations due to its narrow therapeutic range, dose response variability, and numerous drug-drug and drug-food interactions. Therefore, to ensure optimal anticoagulation with warfarin, a patient's international normalized ratio (INR) must be frequently monitored. Time in therapeutic range (TTR) is used to assess the percentage of time a patient on warfarin is within their target INR range, allowing clinicians to estimate a patient's quality of anticoagulation. Certain patient characteristics exist that may lead to a higher or lower TTR while on warfarin for anticoagulation. The purpose of this study is to identify these individual risk factors in our patient population at Prisma Health to better warfarin management and help to identify those at greater risk for complications.

Methods: This retrospective cohort study included patients aged 18 years and older on warfarin therapy for at least 30 days who were being managed by the Coumadin Clinic at Prisma Health Cardiology. To be included, patients had to have an INR goal range of 2.0-3.0 or 2.5-3.5 and have at least 3 INR values reported between November 1, 2023 and April 30, 2024 with INR values no greater than 60 days apart. The primary objective was to identify variables associated with lower or higher TTR related to warfarin therapy, such as race, warfarin indication, weight (kg), or history of thromboembolic events. The secondary objective was to determine the safety of warfarin therapy in patients with different TTR ranges. Statistical analysis will involve multivariate logistic regression and descriptive statistics.

Results: In progress

Conclusion: In progress

global: Y

10:30am – 10:45am C **Use of Guideline Directed Medical Therapy and Safety in Patients with Cardiogenic Shock** Athena B

Moderators: Andi Ray
Presenters: Thomas Thielbar
Evaluators: Kyle Starling

Title: Use of Guideline Directed Medical Therapy and Safety in Patients with Cardiogenic Shock

Authors: Thomas Thielbar, Kelly Dunton, Pujan Patel, Laila Handshaw

Background: Heart failure with reduced ejection fraction (HFrEF) clinical practice guidelines currently recommend the use of guideline directed medical therapy (GDMT) to improve survival, decrease hospitalizations, and improve symptoms in patients with HFrEF. Several studies have demonstrated that early initiation of GDMT during hospitalization, once hemodynamically stable, to be safe and clinically beneficial. This study aims to assess the current ordering practices and safety of GDMT in American Heart Association (AHA) stage D / New York Heart Association (NYHA) class IV heart failure (HF) patients hospitalized for acute decompensated heart failure (ADHF).

Methods: This single-site, retrospective, cohort study included patients age ≥18 years, hospitalized at AdventHealth Orlando, admitted with ADHF (defined as having signs and symptoms of congestion, actively receiving inotropes, and/or temporary mechanical circulatory support [MCS]), classified as AHA stage D / NYHA class IV HF, and underwent an advanced HF evaluation. Exclusion criteria include history of durable left-ventricular assist device (LVAD), type 1 diabetes, history of diabetic ketoacidosis (DKA) or euglycemic DKA, history of angioedema associated with GDMT, and pregnant women. The primary endpoint is percentage of patients on GDMT including angiotensin-converting enzyme inhibitor (ACEi) / angiotensin II receptor blocker (ARB) / angiotensin receptor-neprilysin inhibitor (ARNI), beta-blocker (BB), mineralocorticoid receptor antagonist (MRA), and sodium-glucose cotransporter 2 inhibitors (SGLT2i) at three points including day of admission, 72 hours post inotrope or MCS initiation, and day of discharge (defined as hospital discharge, in-hospital mortality, left-ventricular assist device implant or heart transplant). Secondary safety endpoints include incidence of genitourinary infections, acute kidney injury or need for renal replacement therapy, hypotension, bradycardia, hyperkalemia, hypoglycemia, DKA, and angioedema assessed at admission, within 72 hours post inotrope or MCS initiation, and discharge. Additional secondary endpoints include number of patients on each individual medication and their doses from primary endpoint, MCS use, inotrope use and dose, vasopressor use, and VIS score at admission, within 72 hours post inotrope or MCS initiation, and discharge. Exploratory safety endpoints include in-hospital mortality, hospital length of stay, ICU length of stay, implant of LVAD, heart transplant, and actively on heart transplant waitlist. Study endpoints were analyzed utilizing descriptive statistics.

Results: A total of 129 encounters, encompassing 108 patients were screened for inclusion in which 27 encounters were excluded. The final study population included 102 encounters, encompassing 84 patients with a median age of 57 (IQR 48-65) years old, predominantly white (43.1%) males (72.5%) with past medical history significant for type 2 diabetes (52.9%), chronic kidney disease (52.9%), and arrhythmias (66.7%). The primary cause of HF was non-ischemic cardiomyopathy. Only 20.6% of patients were on all four GDMT medication classes prior to admission. SGLT2i and MRA were the most commonly prescribed GDMT at all three time points. Incidence of SGLT2i was 43.1%, 61.8%, and 78.1% at admission, 72 hours post inotrope or MCS initiation, and discharge respectively. Incidence of MRA was 49%, 80.4%, and 87.5% at admission, 72 hours post inotrope or MCS initiation, and discharge respectively. For secondary endpoints, administration of any GDMT did not increase incidence of any associated adverse effect.

Conclusion: We observed that in this patient population, SGLT2i and MRA were most commonly ordered and did not increase the incidence of any safety outcomes assessed. This study illustrates that it is safe to optimize GDMT in this patient population, however, further studies are needed to assess efficacy on a larger scale.

global: Y

10:30am – 10:45am R **Efficacy and Safety of Bivalirudin Compared with Heparin Anticoagulation in Critically Ill Patients Requiring Venovenous Extracorporeal Membrane Oxygenation** Athena G

Moderators: Spencer Roper
Presenters: Brianna Landrum
Evaluators: Vince Buttrick

Title:
Efficacy and Safety of Bivalirudin Compared with Heparin Anticoagulation in Critically Ill Patients Requiring Venovenous Extracorporeal Membrane Oxygenation

Authors:
Brianna R. Landrum; Nick Tran; Kayla A. Lawlor; Sagar B. Dave; Christina Creel-Bulos; Casey Miller; Jolie Gallagher

Objective:
To evaluate the efficacy and safety of bivalirudin compared with heparin anticoagulation in critically ill patients requiring VV-ECMO.

Self Assessment Question:
The ELSO General Guidelines currently recommend unfractionated heparin as the preferred anticoagulant for patients requiring VV-ECMO.
a) True
b) False

Background:
Extracorporeal membrane oxygenation (ECMO) is an invasive mechanical circulatory support system that is utilized in the management of critically ill patients. Veno-venous ECMO (VV-ECMO) is primarily used for patients with respiratory failure, and anticoagulation is crucial to prevent thrombosis. Both unfractionated heparin (UFH) and bivalirudin are commonly used anticoagulants in ECMO; however, the data comparing these agents in VV-ECMO is sparse. Therefore, this study aims to evaluate the efficacy and safety of bivalirudin compared with heparin anticoagulation in critically ill patients requiring VV-ECMO.

Methods:
This retrospective study was conducted at Emory University Hospital (EUH), including adult patients (≥18 years) who received VV-ECMO between January 2020 and April 2024. Patients who were anticoagulated with either UFH or bivalirudin within 24 hours of VV-ECMO cannulation were included. Exclusion criteria included pregnancy, history of factor deficiencies, history of Chronic Thromboembolic Pulmonary Hypertension (CTEPH), VA-ECMO cannulation, single-site cannulation, death or withdrawal of care within 24 hours of VV-ECMO cannulation, or ECMO managed at an outside hospital (OSH) for greater than 30 days. The primary outcome was the incidence of VV-ECMO circuit or oxygenator exchange. Secondary outcomes included time spent within the therapeutic anti-Xa and activated partial thromboplastin time (aPTT) ranges, ICU and hospital length of stay, duration of mechanical ventilation and VV-ECMO support, and the incidence of systemic thrombosis and post-decannulation thrombosis. Safety outcomes included the total volume of blood products transfused, the incidence of new hemorrhage, the occurrence of thrombocytopenia or heparin-induced thrombocytopenia (HIT), and mortality rates, including both inpatient and pre-decannulation mortality, as well as mortality at 28 days.

Results:
A total of 124 patients were included, with 75 receiving UFH and 49 receiving bivalirudin.
Baseline characteristics were similar between the two groups, though patients receiving bivalirudin had a higher Sequential Organ Failure Assessment (SOFA) score (10 for UFH vs. 12 for bivalirudin, p=0.007) and a larger number of patients with COVID-19 as a primary diagnosis [3 (0.04%) for UFH vs. 26 (53.06%) for bivalirudin]. There were no significant differences in the primary outcome of circuit or oxygenator exchange between the two groups (8.0% for UFH vs. 12.2% for bivalirudin, p=0.538). However, patients on bivalirudin spent a significantly greater proportion of time within the therapeutic aPTT range compared to UFH (58.5% vs. 33.3%, p<0.001). Secondary outcomes showed that patients in the bivalirudin group had significantly longer ICU and inpatient stays, as well as longer durations of mechanical ventilation and VV-ECMO. Both groups had similar rates of hemorrhage and thrombosis, but the bivalirudin group had a significantly higher rate of in-hospital (40.8% vs. 17.3%, p=0.004) and pre-decannulation mortality (36.7% vs. 16.0%, p=0.008).

Conclusion:
In patients receiving VV-ECMO, there was no difference in the rate of circuit or oxygenator exchange between bivalirudin or UFH. Bivalirudin was associated with longer ICU and hospital length of stay, increased mechanical ventilation and ECMO duration, and higher in-hospital and pre-decannulation mortality compared to UFH. However, there were no differences in the rate of thrombosis or hemorrhage between the two anticoagulants. The observed differences in outcomes may be attributed to the higher severity of illness in the bivalirudin group, particularly among patients with COVID-19. Despite bivalirudin providing more predictable anticoagulation, these findings suggest that further research with larger, prospective studies and standardized anticoagulation protocols is needed to better define the optimal anticoagulant for VV-ECMO patients.

global: Y

10:30am – 10:45am R **Impact of a Novel Sepsis Diagnostic Test on the Prescribing Habits of Antimicrobials** Athena H

Moderators: Jenna Cox

Presenters: Monica Campbell

Evaluators: Christen Freeman

Title: Impact of a Novel Sepsis Diagnostic Test on the Prescribing Habits of Antimicrobials

Authors: Monica Campbell, Emily Johnston, Hollis O'Neal, Christopher Thomas

Objective: The objective of this study is to calculate de-escalation timing of antibiotics in septic patients prior to and after the use of a novel sepsis diagnostic test at our institution.

Background: IntelliSep, an FDA approved rapid diagnostic and risk stratification test for sepsis has been used at Our Lady of the Lake Regional Medical Center (OLOLRMC) since August 2023. This test uses the biophysical abnormalities of leukocytes and associates this with detection of sepsis and the potential for impeding organ dysfunction. The purpose of this study is to examine the utilization of Intellisep to combat another prevalent issue, antimicrobial resistance. This study examines the utilization of IntelliSep on antimicrobial prescribing habits and compares time to appropriate de-escalation of antimicrobials, initiation of antimicrobials, and other relevant outcomes in presumed septic patients pre and post the use of IntelliSep.

Methods: This study is a single-center retrospective chart review. Patients included in the study are adult patients presenting to Our Lady of the Lake who received an IntelliSep Index Score (ISI). Based on the ISI, patients are classified as band 1, 2, or 3, with band one patients having a negative predictive value for sepsis of 97.5% based on previous studies. One hundred and ninety-five patients with ISI scores that were hidden from providers, and their treatment decisions, will be the control group compared to 400 total patients with ISI scores within the next year of initiation at our institution. A predetermined scoring system for classifying antimicrobials and their spectrum of activity will be used. In this scoring system, category one antimicrobials are the most narrow up to category three as the most broad. Category four medications are considered restricted antimicrobials at our institution. The primary outcome is time to de-escalation of antimicrobials based on this scoring system. Secondary outcomes include percent initiation of antimicrobials, total days of antimicrobial therapy, ICU and hospital lengths of stay, positive blood cultures within 72 hours of admission, and in-hospital mortality.

Results: Our primary outcome of time to de-escalation was 43.6 hours pre-intelliSep and 34.3 hours post-intelliSep in the overall category, and 22.8 hours and 22.1 hours for band 1, specifically. Number of patients initiated on antibiotics was 52 (67%) and 81 (41%) for band 1 patients pre and post-IntelliSep, respectively. Patients initiated on a broad-spectrum (3ab) regimen for band 1 were 32 (63%) and 28 (35%) for pre and post-intelliSep, respectively.

Conclusion: Overall, we did not see a difference in our primary outcome for time to de-escalation of antibiotics. There was a statistically significant difference found in antibiotics started on arrival and patients initiated on a broad-spectrum regimen in our band 1 patients. These results are promising and overall point to a more appropriate usage of antimicrobials after the usage of IntelliSep, a diagnostic and risk stratification test for sepsis.

global: Y

10:30am – 10:45am | **Impact of Comprehensive Education on Antibiotic Duration of Therapy for Community-Acquired Pneumonia in a Community Hospital** Athena A

Moderators: Caren Azurin

Presenters: Keaton Prebble

Evaluators: Caroline Jozefczyk

SERC Abstract: Limit of 600 words or less (not including title and authors).

Title: Impact of Comprehensive Education on Antibiotic Duration of Therapy for Community-Acquired Pneumonia in a Community Hospital

Authors: Keaton Prebble, Layla Marefat

Objective: Determine if pharmacist-led comprehensive education clinical pharmacists and hospitalists impacted the duration of therapy for community-acquired pneumonia.

Self-Assessment Question: The 2019 IDSA CAP guidelines recommend that if a patient is clinically improving, they may complete a total duration of therapy of:

Background: In 2019, the Infectious Disease Society of America (IDSA) released updated guidelines for the treatment of community-acquired pneumonia (CAP). These guidelines recommend a new preferred duration of therapy of no less than a total of five days if the patient has achieved clinical stability. Patients who receive extended antibiotic duration of therapy are at an increased risk of antibiotic resistance development and potential for adverse events. Many patients with CAP are likely to be discharged from an inpatient stay prior to completion of antibiotic therapy, and providers who prescribe antibiotics at discharge can, as a result, increase the duration of therapy when not indicated. This presents an opportunity for clinical pharmacists to intervene in both patients being discharged and those still admitted that it would be reasonable to receive only five days of therapy. This quality improvement project will determine whether comprehensive education to pharmacists and providers impacts the total duration of therapy of antibiotics for patients treated for CAP.

Methods: The study is an IRB-approved, retrospective cohort study. Patients who were hospitalized for at least 48 hours, had a diagnosis of pneumonia within 48 hours of inpatient admission, received antibiotic treatment indicated for pneumonia, and were at least 18 years old were included. Patients who were critically ill, had a palliative care consult during admission, had concomitant bacteremia, had received antibiotics for pneumonia for a separate admission in the last 14 days, or were immunocompromised were excluded.

Education was provided to clinical pharmacists during scheduled monthly meetings for a six-month period starting in August 2024. Hospitalists were educated in a separate meeting prior to post-intervention data collection. Data was collected from February 1, 2024, to July 31, 2024, and September 1, 2024, to February 28, 2025, via Slicer Dicer for the pre- and post-intervention groups respectively. The education consisted of both verbal and written materials that follow both the IDSA CAP guidelines and Baptist Health Lexington policies and procedures.

The primary endpoint was to evaluate the difference in mean antibiotic duration of therapy for patients with CAP in the pre- and post-intervention groups. The secondary endpoints were the difference in median duration of therapy for patients with an antibiotic switch, mean duration of therapy for patients with an outpatient prescription, initial procalcitonin, MRSA nares PCR ordered, sputum cultures collected.

Results: There were 116 and 145 patients from the pre- and post-intervention groups respectively. Overall mean duration of therapy decreased by 0.9 days after the intervention (7.3 ± 2.7 and 6.4 ± 2 days respectively in the pre- and post-intervention groups $p = 0.005$). Median duration of therapy decreased by one day for patients who had any antibiotic switch during admission after the intervention (7 days [IQR 6-10] and 6 days [IQR 5-8] in the pre- and post-intervention groups respectively $p < 0.001$). The mean duration of therapy for patients with an antibiotic prescription at discharge decreased by 1.5 days after the intervention (8.8 ± 3 and 7.3 ± 2.3 days respectively in the pre- and post- intervention groups $p < 0.01$). MRSA nares PCR was ordered for 66 and 76 patients in the pre- and post- intervention groups. Sputum cultures were collected for 36 and 39 patients respectively in the pre- and post- intervention groups.

Conclusions: The pharmacist-led education showed a statistically significant difference between the primary and secondary endpoints between the pre- and post-intervention periods.

global: Y

10:30am – 10:45am L **Dalbavancin Compared to Standard of Care for Acute Bacterial Skin and Skin Structure Infections in the Emergency Department** Olympia 2

Moderators: Skyler Brown
Presenters: Liam Richardson
Evaluators: Kristen Keen

Title: **Dalbavancin Compared to Standard of Care for Acute Bacterial Skin and Skin Structure Infections in the Emergency Department**

Authors: Liam Richardson, Katherine Weller, Christopher M. Bland, Jamie L. Wagner, Bruce M. Jones

Objective: By the end of this presentation participants will be able to describe the use of dalbavancin in the ED for ABSSSI admission avoidance, and discuss the clinical outcomes of dalbavancin compared to oral SOC antibiotics for treatment of ABSSSI in the ED

Self Assessment Question: Was there a significant difference in 30-day treatment failure between non-admitted patients treated with dalbavancin or oral SOC antibiotics for ABSSSI in the ED?

Background: Dalbavancin is a long-acting lipoglycopeptide antibiotic with broad gram-positive activity and is currently used per-protocol for admission avoidance and treatment of acute bacterial skin and skin structure infections (ABSSSIs) in both St. Joseph's and Candler Hospital emergency departments (ED). There are limited data comparing clinical outcomes of dalbavancin and oral antibiotics for treatment of ABSSSIs in the ED. The aim of this study is to evaluate clinical outcomes of patients with ABSSSIs treated in the ED and not admitted with dalbavancin compared to oral antibiotics.

Methods: This retrospective quasi-experimental study evaluated clinical outcomes in ED patients treated with dalbavancin or oral antibiotics for cellulitis or abscess. The primary outcome was treatment failure, with a secondary outcome of adverse events reported. Patients who received oral antibiotics (the standard-of-care (SOC) group) (June 1, 2020–May 31, 2022) were identified using structured query language with ICD-10 codes for cellulitis (L03.XXX) and abscess (L02.XXX). Patients who received dalbavancin (June 1, 2022–September 1, 2024) were identified via a computer-generated list. Subjects were screened via random sampling for inclusion (ED visit for cellulitis/abscess without admission) and were matched 1:1 based on ICD-10 diagnoses. Demographics, infectious diagnosis, organism(s) isolated, infection-related labs, comorbidities, renal function, financial information, and antibiotics received were collected. Adverse events and culture/susceptibility data, if available, were recorded. Treatment failure was defined as hospital admission within 30 days or antimicrobial change due to the index infection. Data were collected and analyzed in Microsoft Excel. Categorical data were assessed using Chi-square or Fisher's exact test, and continuous data with Student's t-test or Mann-Whitney U, as appropriate. An alpha of 0.05 was deemed statistically significant.

Results: One hundred fifty patients (75 per group) were included. The median age was 56.5 years, and 50% were male. Most patients had cellulitis (136/150), with only 14 presenting with abscess as the primary diagnosis. Overall, 17 (22.7%) dalbavancin patients experienced treatment failure compared to 10 (13.3%) SOC patients (p = 0.137). Among those who failed treatment, the mean time to return was 4.8 days for dalbavancin patients versus 8.5 days for SOC patients (p=0.135). Prior oral antibiotic failure occurred in 54 (72%) dalbavancin patients and 15 (20%) SOC patients (p=<0.00001). Among SOC patients, cephalexin was the most prescribed discharge antibiotic (45%), followed by clindamycin (29.3%). A history of methicillin-resistant *Staphylococcus aureus* (MRSA) was present in 12 (16%) SOC patients and 7 (9.3%) dalbavancin patients. Positive cultures occurred in 10 (13.3%) dalbavancin patients (6 *Staphylococcus aureus*; 2 MRSA) versus 4 (5.3%) in the SOC group (3 *Staphylococcus aureus*; all MRSA). There were overall zero adverse events related to antibiotic therapy reported amongst both dalbavancin and SOC patients. Ten (13.3%) dalbavancin patients were un-insured compared to 22 (29.3%) SOC patients (p=0.0168). Mean inflation-adjusted reimbursement per patient was $4,478 for dalbavancin patients and $274 for the SOC patients. Additionally, 45/75 (60%) of dalbavancin patients had zero patient copay after insurance compared to 63/75 (84%) of SOC patients.

Conclusion: While dalbavancin had a numerically higher failure rate than SOC, more dalbavancin patients had failed prior SOC therapy, suggesting greater baseline infection severity; however, this study found no statistically significant difference in failure rates between the groups. Future studies controlling for other confounding variables, including prior treatment failures and more diverse infectious diagnoses should be performed to further evaluate these initial findings.

global: Y

10:30am – 10:45am L **Evaluation of Clindamycin Use for Surgical Prophylaxis in Patients with Reported Beta-Lactam Allergy** Parthenon 1

Presenters: Jessica Vail

Evaluators: Katie Coffee, Lindsay Reulbach

Title: Evaluation of Clindamycin Use for Surgical Prophylaxis in Patients with Reported Beta-Lactam Allergy

Authors: Jessica Vail, Doug Carroll, Stephen Eure

Background/Purpose: New practice parameters were published in 2022 by the American Academy of Allergy, Asthma, and Immunology (AAAAI) and the American College of Asthma, Allergy, and Immunology (ACAAI), outlining specific recommendations for cephalosporin use in the presence of beta-lactam allergy. For all types of reactions to penicillin (including anaphylaxis), the practice parameters recommend the administration of cefazolin without prior testing precautions (such as penicillin skin testing or oral dose challenges). For all types of cephalosporin reactions, the practice parameters recommend skin testing or an oral dose challenge prior to cefazolin administration. At DCH Health System, clindamycin is commonly used for surgical prophylaxis in the presence of beta-lactam allergy, despite its adverse effect profile (including *C. difficile* infections) and increased resistance rates with common pathogens found in surgical site infections (such as *S. pyogenes* and *S. agalactiae*). The purpose of this review is to characterize current practices at DCH Health System in the context of surgical prophylaxis compared to the 2022 practice parameter update recommendations and identify areas of future improvement.

Methodology: A retrospective chart review was conducted among patients ≥19 years old with labeled penicillin or cephalosporin allergy who received clindamycin monotherapy for surgical prophylaxis from April to June 2024. A total of 100 patients were included in the study. The primary outcome was to determine the number of beta-lactam allergic patients in the sample who would have been candidates for receipt of cefazolin based on the AAAAI/ACAAI practice parameter update. Secondary outcomes evaluated include the characterization of allergy documentation, history of successful cephalosporin administration, incidence of surgical site infections, rehospitalization rates, and incidence *C. difficile* infections.

Results: For the primary outcome, 79/100 patients would have been candidates to receive cefazolin without prior precautions. The 21/100 patients reporting a cephalosporin allergy would need either a negative penicillin skin test or an oral dose challenge prior to receiving cefazolin. For secondary outcomes, 33% of patients were candidates for cefazolin administration based on a history of successful cephalosporin administration an allergy comment stating tolerance to cephalosporins. Four percent of patients had a documented surgical site infection at follow-up within 30 days and two of these patients were rehospitalized within the same time-frame. No patient had a documented C. difficile infection within 30 days of clindamycin administration.

Conclusions: Based on the 2022 AAAAI/ACAAI practice parameter update, clindamycin is over-utilized in patients with beta-lactam allergy and its use for surgical prophylaxis is a potential antimicrobial stewardship opportunity for pharmacists.

global: Y

10:30am – 10:45am L **Proton Pump Inhibitor Use in Patients with Cirrhosis and its Association with Spontaneous Bacterial Peritonitis** Parthenon 2

Moderators: Criag MacDonald
Presenters: Morgan Thomas
Evaluators: Che Jordan

Title: Proton Pump Inhibitor Use in Patients with Cirrhosis and its Association with Spontaneous Bacterial Peritonitis

Authors: Morgan Thomas, Cameron Lanier, Kelly Covert

Objective: To determine the incidence of first episode of spontaneous bacterial peritonitis in patients with cirrhosis who are on proton pump inhibitor therapy.

Self-Assessment Question: True or False. The American Association for the Study of Liver Disease recommends avoiding proton pump inhibitors (PPIs) in cirrhotic patients admitted with acute on chronic liver failure unless there is a clear indication.

Background: Liver cirrhosis is a significant source of mortality and morbidity in the United States. Advanced liver dysfunction in cirrhosis causes an alteration of the immune system and promotes bacterial translocation which increases patients' susceptibility to infection such as spontaneous bacterial peritonitis (SBP). Risk factors for SBP include upper gastrointestinal bleeds, previous SBP episodes, low ascitic protein, and elevated MELD scores. In addition to these proven risk factors, it is hypothesized that proton pump inhibitors (PPIs) may contribute to SBP. The goal of this study is to evaluate the impact of PPIs on SBP development in patients with cirrhosis. Additionally, this study will evaluate the appropriateness of PPI medication choice, dose, duration of therapy, and documented indication for PPI therapy.

Methods: Eligible patients were those $\geq$18 years old with diagnosis of cirrhosis (by ICD-10 codes) admitted to a Ballad Health Facility for SBP rule out between the dates of June 1, 2022 - June 31, 2024. Patients were excluded if they were pregnant, incarcerated, or had a recent (within 2 weeks of hospitalization) or current upper gastrointestinal or variceal bleed. The primary objective of this study is to determine the incidence of first episode of spontaneous bacterial peritonitis in patients with cirrhosis who are on proton pump inhibitor therapy. Secondary outcomes included the documented indications for PPI therapy, the rate of PPI therapy usage prior to admission, in-hospital mortality rate, and the incidence of new or worsening ascites, esophageal varices, and hepatorenal syndrome.

Results: Eighty-one patients were included in this IRB-approved study, with 42 receiving PPI therapy prior to admission and 39 who were not. The incidence of SBP was 33.3% among patients receiving home PPI therapy, compared to 20.5% in those not on PPI therapy ($\chi^2 = 0.249$, $p = 0.618$). Across the entire cohort, 99% experienced new or worsening ascites, 42% developed new or worsening hepatic encephalopathy, 11% had newly identified esophageal varices, and 21% developed new hepatorenal syndrome. Documentation of the clinical indication for PPI therapy was infrequent. The median hospital length of stay was 6 days (IQR 3–11). Additionally, 29.6% of patients required ICU admission, 9.9% died during hospitalization, and 4.9% underwent hemodialysis.

Conclusion: This retrospective chart review found no statistically significant increase in the incidence of SBP among cirrhotic patients receiving PPI therapy. Key limitations of the study include its retrospective design, limited information on the duration of PPI use prior to admission, and a relatively small sample size. Larger, prospective studies are warranted to more accurately assess the potential role of PPI therapy in the pathogenesis of SBP in patients with decompensated cirrhosis.

global: Y

10:30am – 10:45am M **Implementation and Analysis of a Pharmacist-led Heparin Infusion Consult Service at an Academic Medical Center** Athena C

Moderators: Alexander Tunnell
Presenters: Abigail Mason
Evaluators: Amanda Moyer

Implementation and Analysis of a Pharmacist-Managed Heparin Infusion Service at an Academic Medical Center

Abigail Mason, Brittany White, Emily Goodwin, Ashley Williams, Jesse Briscoe, Kyle Knapp

Background

Unfractionated heparin is widely used as a first-line anticoagulant for hospitalized patients due to its rapid onset of effect and short duration. Given the inherent risk of bleeding with heparin administration, frequent lab monitoring is required to maintain target lab levels and to minimize risk of adverse effects. An internal analysis of a historic nurse-led heparin infusion protocol revealed frequent protocol non-compliance and deviations resulting in a facility change to a pharmacist-led protocol in December 2023. This project compares historic lab outcomes and safety events between nurse-driven and pharmacy-driven heparin protocols.

Methods

This IRB-approved, retrospective cohort analysis compared laboratory and safety outcomes between historic nurse-led protocol and pharmacist-led protocol. Patients meeting the following criteria were identified for inclusion in the pharmacist-led cohort: age greater than 18 years, admission to Erlanger Baroness Hospital, and receipt of the standard, reduced-dose, or low-dose Heparin Infusion Protocols between March 1, 2024 and March 30, 2025. Patients were excluded if they received heparin therapy for less than 24 hours or if the baseline activated partial thromboplastin time (aPTT) exceeded 40 seconds. The primary outcome of this study was difference between cohorts in mean time, in hours, to first aPTT result at or above the protocol-specified target range. Results were stratified by heparin infusion protocol. Secondary outcomes included pharmacist-led heparin protocol adherence, mean number of aPTT checks in therapeutic range, and documented bleeding events during the hospitalization. Adherence to heparin protocols in the pharmacist-led group was assessed in three domains. This included selection of correct initial heparin bolus dose, correct initial infusion rate, and correct subsequent rate adjustments as specified by the ordered heparin protocol. Additionally, the mean time from aPTT result to pharmacist order change and time from pharmacist order change to nurse medication administration was analyzed.

Results: The implementation of a pharmacist-managed heparin service at Erlanger resulted in a statistically significant reduction in the median time to achieve the primary outcome of first therapeutic aPTT or higher, decreasing from 10.1 hours in the nurse-managed group to 6.3 hours ($p<0.0001$). This significant improvement was observed across standard-dose (10.4 to 6.3 hours, $p<0.0001$), reduced-dose (10.0 to 6.4 hours, $p=0.0207$), and low-dose protocols (9.0 to 6.2 hours, $p=0.0099$). Regarding secondary outcomes, the pharmacist-managed group demonstrated a statistically significant decrease in the percentage of sub-therapeutic aPTT checks per patient (40% to 31%, $p=0.0003$) and a significant increase in therapeutic checks ($p=0.0180$) compared to the nurse-managed group. Notably, there were no significant differences between groups in the rates of supratherapeutic aPTT checks or aPTTs exceeding 150 seconds. Pharmacist adherence to the protocol was high at 95.4%, with a median time of 4.5 minutes from lab result to order entry and 18 minutes to rate change documentation.

Conclusions: In conclusion, the pharmacist-managed heparin service at Erlanger effectively improved the time to therapeutic anticoagulation and improved the proportion of therapeutic aPTTs without increasing the risk of excessive anticoagulation.

global: Y

10:30am – 10:45am S **Implementation of a Pharmacist-Managed Buprenorphine Induction Protocol for Patients with Opioid Use Disorder (OUD) in the Inpatient Setting** Olympia 1

Moderators: Don Tyson
Presenters: Madeline Lysogorski
Evaluators: KIMM FREEMAN

Title: Implementation of a Pharmacist-Managed Buprenorphine Induction Protocol for Patients with Opioid Use Disorder (OUD) in the Inpatient Setting

Authors: Madeline Lysogorski, PharmD, Charleen Melton, PharmD, BCCCP, Holly McLean PharmD, CPP, BCPS, BCCCP, Joe Norton PharmD, BCPS

Background:
In recent years, there has been an increase in research published discussing high-dose buprenorphine for induction of Medication-Assisted Therapy (MAT) in patients with Opioid Use Disorder (OUD), with the primary setting being inpatient induction. However, none of these studies specifically highlight interventions that can be made by a clinical pharmacist during the induction process. This study aims to evaluate the impact of a pharmacist-managed buprenorphine MAT- induction protocol in hospitalized patients with OUD.

Methods:
This study is being conducted as a prospective chart review at CaroMont Regional Medical Center, a 476-bed not-for-profit community hospital located in Gastonia, NC. Patients will be evaluated for withdrawal symptoms by an attending physician, who will subsequently order a pharmacy consult for patients to be initiated on buprenorphine. The patients will then be enrolled in the pharmacy protocol and followed until they are successfully maintained on their maintenance dose (Day 3 of the consult). Data will be collected utilizing the hospital's electronic health record (EHR) and will evaluate patients that were initiated on the buprenorphine initiation protocol from November 1st, 2024, through March 31st, 2025. Those included in the study will be adult inpatients over 18 years old that are initiated on the pharmacist-managed buprenorphine protocol. Patients will be excluded if they are part of a vulnerable population (under 18 years old or incarcerated), if they are already established on a buprenorphine/naloxone regimen outpatient, or if they were initiated on buprenorphine in the emergency department (ED) and discharged to complete induction outpatient. The primary outcome to analyze in this study is the number of patients who had successful buprenorphine induction on the pharmacist-managed protocol, defined as the patient not leaving AMA, completing the induction protocol during their admission, and being successfully connected to care at discharge.

Results: A total of 15 patients were enrolled in the study. 13/15 patients (86.66%) had successful induction, and met our primary endpoint . 2/15 patients left AMA prior to completion of the protocol, with the average hospital length of stay being 4.5 days. The average total daily dose of buprenorphine that patients received was 19.6mg, and the average total buprenorphine dose received during admission was 58.3mg. The majority of patients (8/15) were connected to care with a local health department that provides MAT services with a bridge prescription until they were able to be seen by a provider.

Conclusions: High dose buprenorphine induction in the inpatient setting is the ideal environment, due to consistent monitoring for withdrawal management. No patients in this study failed induction due to adverse events. Addressing institutional barriers can make the protocol more successful and increase recruitment.

global: Y

10:30am – 10:45am T **Implementation of a Glucagon Discharge Prescription Protocol at a Large Community Hospital** Athena I

Moderators: Kayla Lawlor
Presenters: Grace Rooks
Evaluators: brian meister

Title: **Implementation of a Glucagon Discharge Prescription Protocol at a Large Community Hospital**

Authors: Grace Rooks, Sophia Carter, Lauren Butler, Anna Cross

Background: According to the American Diabetes Association (ADA) and the Endocrine Society, patients at risk for emergent hypoglycemia, including those treated with insulin, should have access to glucagon to help prevent prolonged severe hypoglycemia and its complications. Severe hypoglycemia is a frequent cause of expensive emergency department visits and the use of emergency medical services. Hypoglycemia events result in more than 100,000 emergency department visits annually, with a cost of roughly $120 million. Clinicians should readily assess patients' access to glucagon, and the ADA guidelines recognize that glucagon prescribing practices are very low. The purpose of this project is to increase at home access to glucagon for emergent hypoglycemia events in at risk patients.

Methods: This is a single-center analysis of pre-implementation data from May to August 2024 and post-implementation data from November 2024 to February 2025. Patients included in this study were 19 years of age or older who have been diagnosed with Type 1 or Type 2 Diabetes or Latent autoimmune diabetes in adults (LADA). Due to the majority of insulin prescribers at Huntsville Hospital being the hospitalists, endocrinologists, University of Alabama at Birmingham (UAB) physicians, a glucagon discharge prescription protocol was created by clinical pharmacists and approved by these providers for insulin prescriptions sent to Huntsville Hospital retail pharmacies. The protocol allows transitions of care (TOC) pharmacists to add glucagon for patients with a new insulin prescription at discharge who did not already have a glucagon prescription. The primary endpoint of this study is the number of glucagon prescriptions that were dispensed for adult patients who received a new insulin prescription at discharge. Additionally, rates of glucagon initiation, initiating service, different dispensing barriers, and cost margins will be evaluated.

Results: In the pre-implementation group, 2 glucagon prescriptions were sent and 1 was dispensed. In the post-implementation group, 35 glucagon prescriptions were sent and 17 (49%) were dispensed. 94% of glucagon prescriptions from the post-implementation group were sent by a TOC pharmacist. Of the 18 glucagon prescriptions that were not dispensed, majority of them were due to the patient requesting a prescription transfer (77.7%). Of the 25 uninsured patients, 12 (48%) received a patient assistance pamphlet.

Conclusion: The implementation of a glucagon discharge prescription protocol increased patient access to glucagon at home for the treatment of emergent hypoglycemia and increased glucagon prescribing rates. Patients' pharmacy preference had the largest impact on glucagon dispensing rates. Pertinent limitations include sending prescriptions to only Huntsville Hospital retail pharmacies and excluding patients that are discharged outside of TOC pharmacist coverage areas and hours. Educating and involving more providers is needed to increase glucagon access at home in addition to continued protocol practices.

global: Y

11:00am – 11:15am A **Evaluating the Impact of an Intravenous Workflow Management System on Error Detection During Sterile Compounding** Olympia 1

Moderators: Marci Swanson, Nadia Hason

Presenters: Alex Kwan

Title:

Evaluating the Impact of an Intravenous Workflow Management System on Error Detection During Sterile Compounding

Authors:

Alex Kwan, Christopher Duphren

Objective:

To evaluate the error detection rate and error types between products prepared without technology and those with IVWMS.

Self Assessment Question:

Does the use of IVWMS increase the detection of errors during IV compounding, True or False?

Background:

Intravenous (IV) medication errors remain a significant patient safety concern, with manual preparation error rates reaching up to 37% for complex solutions. To mitigate this, hospitals are adopting IV workflow management systems (IVWMS), which utilize barcode scanning and volumetric verification to enhance error detection when verifying compounding sterile products (CSP). Studies have shown that IVWMS detect errors at significantly higher rates than manual processes and eliminate incorrect drug errors. Despite these benefits, adoption is limited; only 24.7% of larger hospitals had implemented such technology by 2017. The Institute for Safe Medication Practices (ISMP) emphasizes the importance of these technologies for improving IV preparation safety. This study aims to evaluate the implementation of an IVWMS at a tertiary hospital to assess its impact on compounding accuracy and efficiency.

Methods:

This single-center, prospective study with retrospective data collection aims to assess the impact of an IVWMS on reducing medication errors during IV medication preparation in a hospital setting. The primary objective of this study is to evaluate the error detection rate and error types between products prepared without technology and those with IVWMS. The secondary objective was to evaluate the benefit of IVWMS between adult and pediatric IV doses. Compounded sterile products produced at the inpatient pharmacy of Wellstar MCG and the Children's Hospital of Georgia two weeks before and after the implementation of IVWMS were evaluated. Compounded chemotherapy, parenteral nutrition, and renal replacement therapy were excluded. Pharmacists were given a standard data collection form and instructed to record errors identified during compounding before IVWMS. Post-IVWMS error detection reports were generated from the software and analyzed. Errors were defined as deviations from the details on the patient label or institutional CSP preparation policies. Descriptive statistics, including means, medians, and frequencies, will be used to characterize the data and compare pre- and post-implementation groups to assess the impact of the IVWMS.

Results:

The total number of IV doses prepared before and after the implementation of the IVWMS were 2818 and 3183, respectively. IVWMS significantly enhanced error detection during intravenous medication compounding ($n = 25$, 0.89% vs. $n = 281$, 8.83%; $p < 0.05$). The top three error types before IVWMS were incorrect medication (32%), compounding method or technique issue (28%), and incorrect medication volume (24%). With IVWMS, incorrect medication was the most common error detected (92%). The types of errors detected were similar with IVWMS compared to without IVWMS across adult and pediatric populations. The frequency of errors detected for pediatric patients increased after the implementation of IVWMS ($n = 13$, 52% vs. $n = 198$, 70.5%).

Conclusion:

The large increase in post-implementation errors reflects the enhanced detection and documentation capabilities of the IVWMS. Compounding technique-related issues decreased post-implementation, which may suggest that IVWMS standardizes compounding practices. A significant implementation challenge identified was the need for frequent mixture record maintenance due to concurrent EHR transition, highlighting the importance of accurate master formula documentation for reliable barcode scanning verification. The use of IVWMS demonstrated improvement in detecting potential intravenous medication compounding errors, with a 10-fold increase in error detection. Study findings emphasize the critical importance of maintaining accurate mixture records within the IVWMS for optimal error detection. Future focus should include ongoing monitoring of IVWMS compounding records, regular updates to mixture records, and continued

assessment of error patterns to optimize IVWMS effectiveness.

global: Y

11:00am – 11:15am B **Blood Pressure Reduction in GLP-1 RA Users in a Family Medicine Clinic** Athena D

Moderators: Stephanie Hopkins
Presenters: Julia Mesawich
Evaluators: McKenzie Hodges

Title: Blood Pressure Reduction in GLP-1 RA Users in a Family Medicine Clinic

Authors: David Mercer, PharmD; Julia Mesawich, PharmD; Tiffaney Threatt, PharmD, CDCES, BC-ADM, FADCES
Practice Site: Prisma Health-Upstate

Background:
The prevalence of hypertension has surged, with the 2017-2018 NHANES survey indicating that 45.4% of US adults over the age of 18 years old have hypertension. Hypertension is a common complication of type 2 diabetes mellitus (T2DM), and approximately 70% of those with T2DM have hypertension. Therefore, a therapy that simultaneously lowers blood pressure and blood glucose could be an ideal treatment option for patients who require comprehensive management of these conditions. Incretin-based therapy is an emerging treatment for T2DM and obesity that can stimulate insulin secretion, improve insulin resistance, and reduce body weight. While some meta-analyses have shown that patients on GLP-1 RAs experience modest blood pressure lowering, there have not been any studies that look at this as a primary endpoint. The primary objective was to determine the blood pressure lowering effect of GLP-1 RAs on systolic and diastolic blood pressure in adults within 1 year of starting a GLP-1 RA.
Methods:
This study was an observational, retrospective pre-post study of approximately 100 patients completed at Travelers Rest Family Medicine in South Carolina. Patients were identified for inclusion if they were prescribed a GLP-1 RA between 12/01/2020 and 06/01/2021, with this date range chosen to give sufficient sample size and to minimize gaps in therapy due to medication shortages.

GLP-1 RA use was defined as at least two prescriptions sent for the same GLP-1 RA, authorized on different dates, as reported within the electronic medical record. Participants were excluded if they did not have enough refills of the GLP-1 RA to last a 12-month period. Participants were also excluded if they were started on a GLP-1 RA and a blood pressure lowering medication at the same visit, if they underwent bariatric surgery during the timeframe, or became pregnant during the timeframe.

Clinic-measured systolic and diastolic blood pressures from baseline to one year after the initiation of GLP-1 RA therapy were collected to assess the primary endpoint. The secondary analysis includes an evaluation of the change in systolic and diastolic blood pressure from baseline to month 9-12 within the population with a diagnosis of hypertension, change in systolic and diastolic blood pressure stratified by GLP-1 RA use, and an evaluation of the change in weight from baseline to month 9-12 after GLP-1 RA initiation.

Results:
A total of 77 participants were evaluated for change in blood pressure from baseline to month 9-12 after GLP-1 RA initiation. In looking at baseline characteristics, 100% of the participants had a diagnosis of type 2 diabetes, and 80.52% had a diagnosis of hypertension. Most participants started on semaglutide injection (33.77%) or dulaglutide injection (36.36%). For the primary outcome, there was a statistically significant change in SBP from baseline to 9-12 months after GLP-1 RA initiation with a p value of <0.001. There was no statistically significant change in diastolic blood pressure within the study timeframe.

Within specific GLP-1 RA medications, the only medication that had a statistically significant change in blood pressure from baseline to month 9-12 was dulaglutide injection. The lack of statistical significance within other groups may have been due to the small sample sizes. There was not a statistically significant change in weight from baseline to month 9-12 within the population. This may have been due to many not reaching maximum doses of GLP-1 RA agent.

Conclusions:
From baseline to month 9-12, GLP-1 receptor agonists lowered blood pressure with statistical significance. When looking at the individual GLP-1 RAs, only dulaglutide injection had statistically significant blood pressure lowering effects. In conclusion, in someone with hypertension and another compelling indication, GLP-1 RAs may be a good option for comprehensive management of comorbidities.

Contact: julia.mesawich@prismahealth.org

global: Y

11:00am – 11:15am B **Improving Antimicrobial Stewardship Through Penicillin Allergy Verification in a Rural Setting** Athena C

Moderators: Beth Phillips

Presenters: Nicole Kochmann

Title: Improving Antimicrobial Stewardship Through Penicillin Allergy Verification in a Rural Setting

Authors: Nicole M Kochmann, Abigail J. White, Bryan “Russ” Gunter

Objective: Decrease the number of incorrectly documented penicillin allergies in a rural population.

Background: Approximately 10% of patients report a penicillin allergy, however, up to 90% of these are not true allergies. Inaccurate allergy documentation contributes to unnecessary use of broad-spectrum antibiotics, increasing the risk of antimicrobial resistance, adverse events, and healthcare costs. This project aimed to review current penicillin allergy documentation, identify areas for improvement, and determine patient eligibility for allergy testing or delabeling using the PEN-FAST tool. This tool helps identify low-risk patients who may be eligible for a direct oral challenge without the need for referral or skin testing.

Methods:
A total of 101 adult patient charts with documented allergies to penicillin,amoxicillin, or ampicillin were reviewed and PEN-FAST scores calculated. Patients were excluded if they lacked a primary care provider, had no visits in the past three years, or had a history of severe reactions.

Results: Eight charts were excluded due to intolerance rather than allergies. With the remaining 93 charts: 86 lacked sufficient information to calculate a PEN-FAST score, while only seven had complete information. These results highlight gaps in our allergy documentation process, limiting use of the PEN-FAST tool.

Conclusion: The current allergy documentation process lacks necessary information, making it difficult to accurately assess PEN-FAST scores. There is a need for improved education on documenting allergies beyond just the reaction itself. Next steps for this project include implementing multidisciplinary education, developing educational tools, creating an in-house oral challenge protocol for low-risk patients (PEN-FAST < 3), and establishing a referral process for higher-risk patients (PEN-FAST ≥ 3).

global: Y

11:00am – 11:15am C **Evaluation of Thrombophilia Testing in a VHA Healthcare Facility Before and After Implementation of a New Thrombophilia Testing Protocol** Athena B

Moderators: Courtney Isom

Presenters: Katherine Medley

Evaluators: Jaime Shockley

Title: Evaluation of Thrombophilia Testing in a VHA Healthcare Facility Before and After Implementation of a New Thrombophilia Testing Protocol

Authors: Katherine Medley, Jill Radford, Rebecca Worsham, Shouji Nagata

Background/Purpose: The James H Quillen VA Medical Center (JHQVAMC) does not currently have a standardized process for thrombophilia testing. Testing for thrombophilia should be used to identify the cause of severe or fatal venous thromboembolism (VTE), aid in decision making on future VTE prevention, and direct family member testing. Most risk classification guidelines for VTE recurrence do not consider thrombophilia test results. There is a lack of evidence supporting the clinical benefit of routine testing among patients with VTE. The accuracy and reliability of thrombophilia testing is dependent on the timing of the tests in association with the initial VTE presentation or the presence of an anticoagulant. Inaccurate testing can lead to false positive or false negative results. These false results may contribute to patient harm through unnecessary prolonged duration of anticoagulation, inaccurate diagnosis of thrombophilia, or providing false assurance related to the risk of recurrent VTE. Studies have shown that thrombophilia testing increases the cost of VTE management without adding meaningful clinical value. The purpose of this quality improvement project is to develop and implement a thrombophilia testing protocol to reduce unnecessary and inaccurate thrombophilia testing while promoting patient safety and cost savings at the JHQVAMC.

Methodology: A standardized note template will be created and implemented across the JHQVAMC to guide providers in the appropriate testing for thrombophilia. Data will be reviewed before and after implementation of the standardized ordering process. All patients diagnosed with a VTE who had thrombophilia testing completed within the last 5 years will be identified. Data will be sourced from the corporate data warehouse (CDW), computerized patient record system (CPRS), Joint Legacy View (JLV), and pharmacy benefit management (PBM) services direct oral anticoagulant (DOAC) dashboard. These data will be evaluated to determine if testing and follow-up were appropriately completed. Additional endpoints include costs, duration of anticoagulation, anticoagulant choice, and misdiagnosis rate. Thrombophilia testing practices will be evaluated among inpatient, primary care, and specialty providers.

Results: In progress

Conclusions: In progress

global: Y

11:00am – 11:15am R **Effect of phenobarbital administration in the emergency department for alcohol withdrawal syndrome on length of stay** Athena H

Moderators: Dustin Bryan
Presenters: Payton Mueller
Evaluators: Jenna Jewett

Title: Effect of phenobarbital administration in the emergency department for alcohol withdrawal syndrome on length of stay

Authors: Payton Mueller, Wesley Arrison, and Megan Cavagnini

Background: Alcohol withdrawal syndrome results from a disruption in neurotransmitter homeostasis related to gamma-aminobutyric acid (GABA) and glutamate activity. Benzodiazepines are considered first-line treatment for alcohol withdrawal while phenobarbital is considered an adjuvant agent and is the preferred alternative for patients experiencing severe withdrawal. Studies show that phenobarbital leads to lower rates of mechanical ventilation, reduces symptoms of alcohol withdrawal, and decreases intensive care unit (ICU) admissions. The purpose of this study was to compare the effect of one-time doses of intravenous phenobarbital administered in the emergency department (ED) with standard care for alcohol withdrawal syndrome on hospital length of stay.

Methods: This was a retrospective observational cohort study of patients with alcohol withdrawal syndrome who presented to the emergency department between January 1, 2020 to December 31, 2024 at a two-hospital health system. This study included patients 18 years or older that presented to the hospital via the ED and received treatment for alcohol withdrawal. Patients were excluded if they received multiple doses of phenobarbital, if they received phenobarbital outside of the ED, or if they were transferred from outside hospitals. Patients were identified using a computer-generated list using diagnosis codes for alcohol withdrawal and orders for phenobarbital or the institution's alcohol withdrawal protocol. Subjects were matched in a 2:1 ratio in the standard of care group to the phenobarbital group based on baseline characteristics, demographic information, and patient reported frequency of alcohol use. The primary outcome was hospital length of stay. Secondary outcomes included admission location, intensive care unit length of stay, escalations in care, benzodiazepine use, use of adjuvant agents for alcohol withdrawal, and intubation rates.

Results: There were 165 patients included in this analysis (55 patients in the phenobarbital group; 110 patients in the standard care group). There was no difference in median length of stay between the phenobarbital group and the standard care group (3 days vs 2 days; p = 0.251). There were 11 patients in the phenobarbital group and 11 patients in the standard care group that required ICU admission (20% vs 10%, p = 0.075). Patients in the phenobarbital required a median of 45 mg diazepam equivalents compared to 22.5 mg diazepam equivalents in the standard care group (p = 0.592). Additionally, 25 patients in the phenobarbital group and 26 patients in the standard care group required at least one adjuvant agent (45.5% vs 23.6%; p = 0.004). There were also no differences between the phenobarbital group and standard care group in admission location (p = 0.224), escalation in care (3.2% vs 2.8%; p = 1), and intubation rates (5.4% vs 0.9%; p = 0.108).

Conclusions: This study found no statistically significant difference in hospital length of stay between the phenobarbital group and the standard care group. Patients that received phenobarbital were more likely to receive additional adjuvant agents compared to the standard care group. Additional prospective studies are needed to assess the impact of one-time doses of phenobarbital in the emergency department on clinical and safety outcomes.

global: Y

11:00am – 11:15am R **Evaluation of a Pharmacist Driven Intensive Care Unit Bowel Regimen** Athena G

Moderators: James Holland

Presenters: Rachael Weingarten

Evaluators: Haley Smith

Title: Evaluation of a Pharmacist Driven Intensive Care Unit Bowel Regimen

Authors: Rachael Weingarten, PharmD; Jessica Millen, PharmD, BCPS, BCCCP; Caitlin Edwards, PharmD
Cone Health Moses Cone Hospital

Objective: To discuss and evaluate practice change surrounding the standardization of a pharmacist driven ICU bowel regimen

Self-Assessment Question: True/False: A pharmacist-driven bowel regimen in the ICUs may lead to a decreased time to first bowel movement?

Background: Constipation is one of the most common gastrointestinal problems in critically ill patients affecting up to 80% of adults in the intensive care unit (ICU). Studies have found that constipation is associated with poor clinical outcomes including increased infection rates, ICU mortality, prolonged duration of mechanical ventilation, and length of ICU stay. In the ICU, opioids are the cornerstone treatment for moderate to severe pain and are notorious for causing constipation. Bowel care in the ICU is often neglected, and it is unclear whether bowel protocols can prevent downstream patient outcomes. Previously at Cone Health, there was no standardized bowel regimen for the prevention and treatment of constipation in critically ill patients. In April 2024 a pharmacist-driven bowel regimen was implemented in Moses Cone Memorial Hospital ICUs to manage different forms of constipation. The purpose of this study was to evaluate the impact of this pharmacist-driven standardized ICU bowel regimen management protocol for acute opioid-induced constipation in critically ill patients.

Results: A total of 87 patient charts were evaluated and 47 patients were included in the final analysis. A total of 20 patients were included in the pre-intervention group and 27 in the post-intervention group. The average age was younger at 58 years old in the pre-intervention group compared to 62 years old in the post-intervention group. There were more caucasian patients in the post-intervention group (56% vs. 45%) and more patients admitted to the cardiovascular ICU in the pre-intervention group (60% vs. 13%). The most common additional medication contributing to constipation was diuretic therapy in both groups. The number of days without a bowel movement was 5.29 in the pre-intervention group compared to 4.1 in the post-intervention group (p-value: 0.08). 2 patients in the pre-intervention group experienced diarrhea compared to 8 patients in the post-intervention group (p-value: 0.08). There was no statistically significant difference in any of the other secondary endpoints.

Conclusion: A standardized pharmacist-driven ICU bowel regimen demonstrated a numerical trend toward a reduction in the number of days to achieve a bowel movement.

global: Y

11:00am – 11:15am R **Exploring the Analgesic Efficacy of Ketamine in the Management of Traumatic Injuries** Athena I

Moderators: Vanessa Velazco
Presenters: Aubrey Baker
Evaluators: Adam Sawyer

Title: Exploring the Analgesic Efficacy of Ketamine in the Management of Traumatic Injuries

Authors: Aubrey N. Baker, Jordan Spurling, John Patka, Shauntrell Johnson
Objective: Discuss the use of ketamine in patients with a traumatic injury
Self Assessment Question: What are potential reasons for using ketamine in patients with traumatic injury?
Background: Acute pain is a common complication experienced by trauma patients. Inadequate treatment of acute pain after trauma delays return to work, impairs quality of life and increases the risk of complications such as post-traumatic stress disorder. Although opioids have been the mainstay of treatment, providers have been looking for alternative analgesic agents. Ketamine has analgesic effects and can be beneficial for trauma patients due to its potential beneficial effects on blood pressure and minimal effects on respiratory drive. The purpose of this study is to assess the efficacy of ketamine in patients who have sustained a traumatic injury.
Methods: This study was a single center retrospective chart review conducted at a level 1 trauma center. Patients were included if they presented between December 2023 through February 2024, ≥ 18 years old, and received an initial ketamine dose ≤ 50 mg. Patients were excluded if they had a Glasgow Coma Score ≤ 8, were on outpatient opioid therapy, or if they were admitted for an acute behavioral emergency. Patients presenting December through January were included if missing preceding or post ketamine administration pain score. However, patients in the month of February were only included if they had documented pain scores for both a preceding and post ketamine administration. Pain scores prior to ketamine administration was defined as a pain score documented within an hour including a 15-minute leniency period prior to administration. Furthermore, the institutional guidelines require documentation of pain score on arrival to ED and 60-minutes after analgesic administration. The primary outcome of this project is to compare the difference in pain scores from the initial ketamine dose to the next pain score. The secondary outcome is reviewing ketamine dosing for pain based on internal guidelines. Data analysis included the Wilcoxon rank sum test, repeated ANOVA measures

global: Y

11:00am – 11:15am | **The Impact of Empiric Linezolid Compared to Vancomycin on Inpatient Outcomes** Athena A

Moderators: Ben Albrecht
Presenters: Stacey Excellent
Evaluators: Marcus Mize

Title: The Impact of Empiric Linezolid Compared to Vancomycin on Inpatient Outcomes

Authors: Stacey Excellent, Jason Hoffmann, Pamela Andrews, Patricia R. Louzon

Objective: Evaluate empiric linezolid compared to vancomycin on outcomes in the inpatient setting

Self Assessment Question: Which of the following is most likely to be impacted by the choice of empiric linezolid versus vancomycin in hospitalized patients?

Background: Vancomycin and linezolid are utilized for empiric methicillin-resistant Staphylococcus aureus (MRSA) treatment, but practical differences may influence the preferred choice. Vancomycin requires individualized dosing and monitoring, which can delay administration, while linezolid offers advantages such as cost, oral conversion, and standard dosing that may improve time to first dose. This research aims to compare patient outcomes with each agent to determine the optimal empiric choice.

Methods: Eligible participants were those who received more than 1 dose of either vancomycin or linezolid during 3/1/2024 - 3/31/2024 and were stratified by level of care [intensive care unit (ICU) or non-ICU]. Excluded were those aged less than 18, had confirmed positive cultures, recent antibiotic treatment, or antimicrobial use for surgical prophylaxis. A convenience sample size of the first 50 patients (25 ICU and 25 non-ICU) meeting criteria per group were included. Baseline demographics were collected. The primary endpoint was to assess the impact of empiric vancomycin versus linezolid on inpatient mortality. Secondary endpoints included time to first dose, adverse events, therapy changes, duration of anti-MRSA coverage, length of stay (LOS), cost, vancomycin dosing characteristics, and the appropriateness of anti-MRSA coverage. The primary objective was analyzed using Chi-Square test. The secondary endpoints were evaluated using either Chi-Squared or Fisher's Exact test for categorical data and Mann-Whitney for continuous data.

Results: Baseline characteristics were balanced between groups. Non-significantly more patients in the vancomycin group were on dialysis than linezolid (14% vs. 6%). Patients had fewer MRSA risk factors in the linezolid group than the vancomycin group with anti-MRSA therapy being classified as appropriate (based on risk factors) in 52% of linezolid patients and 64% of vancomycin patients (p = 0.224). The most common suspected source was pneumonia (n=40), followed by skin and soft tissue infections (n=26). The primary outcome of overall mortality was not significantly different between the vancomycin and linezolid groups (22% vs. 12%, p = 0.183). There was also no mortality difference when stratified by ICU and non-ICU. For secondary outcomes, the mean (SD) time to first dose was non-significantly shorter in the linezolid group vs. vancomycin [1.6 (1.7) vs.2 (1.5) hours] for the total population and stratified groups. Hospital LOS, ICU LOS and duration of anti-MRSA coverage were similar between the total population and stratified groups. Incidence of adverse effects of renal dysfunction and thrombocytopenia were similar between groups and treatment failure was not seen in either group. Vancomycin patients had a mean (SD) of 2.8 (4) drug levels drawn which took a median of 54.6 hours to reach therapeutic range. Patients were in therapeutic range for an average of 29.5% of therapy with ICU having more time in range compared to non-ICU (53.6% vs 43.4%). The median cost of the medication was significantly higher in the vancomycin group ($46.59 [IQR: 24.83 – 79.70]) compared to the linezolid group ($29.52 [IQR: 17.83 – 46.22], p = 0.012).

Conclusion: In this retrospective analysis, there was no significant difference in mortality between vancomycin and linezolid. Both agents showed similar efficacy, with no instances of treatment failure in either group. The

incidence of thrombocytopenia and renal dysfunction was not different between groups. The medication cost of therapy was significantly lower with linezolid, demonstrating a cost-effective alternative to vancomycin, reducing direct medication cost. Overall, linezolid may offer an advantage as an empiric gram positive therapy option in terms of cost and resource utilization without compromising clinical outcomes.

global: Y

11:00am – 11:15am L **Evaluation of Safety and Efficacy of Rivaroxaban for Peripheral Artery Disease in Patients with Renal Dysfunction** Olympia 2

Moderators: Sheema Hallaji
Presenters: Persia Nelson
Evaluators: Elizabeth Oglesby

Title:Evaluation of Safety and Efficacy of Rivaroxaban for Peripheral Artery Disease in Patients with Renal Dysfunction

Authors: Persia S. Nelson, Laura Leigh Stoudenmire

Background: Rivaroxaban, a renally-cleared direct-acting oral anticoagulant (DOAC), has obtained FDA approval for patients with stable PAD. Guidelines for the Management of Lower Extremity PAD recommend rivaroxaban 2.5 mg twice a day combined with low-dose aspirin to prevent major adverse cardiovascular events and major adverse limb events in patients with PAD who are not at an increased risk for bleeding. While patients who are at an increased risk of bleeding are not clearly defined in the guidelines, the safety and efficacy of rivaroxaban in patients with renal dysfunction remains an area of clinical concern. The COMPASS and VOYAGER PAD trials, which assessed the use of rivaroxaban for the treatment of PAD, excluded patients with severe kidney impairment. Related trials discussing DOAC use in patients with chronic kidney disease (CKD) showed increased risk of clotting and bleeding in patients with renal dysfunction. Similar trials have also historically excluded patients with severe kidney impairment. Additionally, drug information resources have advised against the use of rivaroxaban in patients indicated for PAD with CrCl < 15 mL/min as the risk benefit associated with rivaroxaban use in patients with CrCl < 15 mL/min is uncertain.

Methods: The purpose of this study was to assess the safety and efficacy of rivaroxaban in patients with renal dysfunction. This retrospective cohort study consisted of patients receiving rivaroxaban 2.5 mg BID with a diagnosis of PAD. Patients were eligible for inclusion if they were adults age 18 and older with a diagnosis of PAD and received rivaroxaban 2.5 mg twice daily from January 1, 2019 to June 30, 2024. Exclusion criteria consisted of pregnant patients, patients with a past medical history of hemorrhagic or ischemic cerebral infarction, active peptic ulcer disease with recent bleeding, and active bleeding prior to initiation of rivaroxaban 2.5 mg BID for PAD. Patients were divided into two groups being CrCl < 15 mL/min and CrCl $\geq$ 15 mL/min. The primary endpoint was major bleeding events which was defined as a $\geq$ 2 g/dL decrease in hemoglobin, documented transfusion $\geq$ 2 units of packed red blood cells, or bleeding of a critical anatomical site (e.g intracranial, spinal, ocular) within 90 days post discharge with rivaroxaban. The secondary endpoint included efficacy and was assessed by evaluating the onset of myocardial infarction, ischemic stroke, acute limb ischemia, major amputation, or cardiovascular death within 90 days post discharge. Additionally, the secondary outcome included bleeding readmission within 90 days.

Results: The primary and secondary composite outcomes were not statistically significant between the CrCl < 15 mL/min group and CrCl $\geq$ 15 mL/min. In reference to the primary outcome, bleeding events had a composite P-value of 0.69. Regarding the secondary outcomes, bleeding readmission had a composite P-value of 0.1 while major adverse cardiac events had a composite P-value of 0.37.

Conclusion: Despite the lack of statistical significance between the groups, further research is necessary to evaluate the safety and efficacy of rivaroxaban in patients with reduced renal function.

global: Y

11:00am – 11:15am L **Implementation of a Pharmacy-Led Medication Therapy Management Clinic in a Rural Community Hospital** Parthenon 2

Moderators: Kristen Turner
Presenters: Stanislava Stancheva
Evaluators: Jonathan Alligood

Title: Implementation of a Pharmacy-Led Medication Therapy Management Clinic in a Rural Community Hospital

Authors: Stanislava Stancheva, Benjamin Gatlin

Objective: To discuss the implementation of a Medication Therapy Management clinic in a rural community hospital and identify advantages of clinical pharmacy services provided.

Background: Medication therapy management (MTM) is a strategy to deliver clinical pharmacy services to patients. The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 requires that Medicare Part D provide MTM services to select beneficiaries with chronic conditions to offer education, improve adherence, and optimize clinical outcomes while minimizing adverse drug events. This process involves collaboration with patients and providers. Under a collaborative care agreement (CCA), pharmacists can manage specified chronic conditions within the scope of practice outlined by treatment protocols. Regarding financial resources, the 340B Drug Discount Program is a federal initiative designed to provide reduced-cost prescription drugs to eligible hospitals that serve uninsured and low-income patients. In rural communities 340B MTM clinics can bridge the gap in care which medical deserts struggle with and provide valuable resources to improve cost effectiveness of care provided.

Methods: This is a retrospective cohort study at Baptist Health Deaconess Madisonville (BHDM) hospital with prospective patient recruitment. Patients with hyperlipidemia, diabetes, and osteoporosis were included and enrolled into the 340B MTM clinic. Comprehensive treatment protocols were created and developed from the ground up, and a collaborative care agreement defined the pharmacist's scope of practice. Pharmacists and pharmacy patient care coordinators were provided with appropriate education including creating and utilizing referrals. The protocols and CCAs were approved by the hospital Pharmacy and Therapeutics and Medical Executive committees. As patients were enrolled and seen in the clinic, data was assessed to identify the role of the pharmacist in management of chronic conditions, prescribing and de-prescribing under protocol, as well as administration of specialty drugs approved under 340B or using manufacturer buy and bill services.

Results: Currently, the 340B MTM clinic at BHDM has successfully expanded to 4 chronic disease states being managed under collaborative care agreements. To date, 242 patients have been included in the study with additional enrollment ongoing. Pharmacists have conducted medication reconciliation, discussed labs, ordered future labs, discussed and altered therapy regimens, and entered prescription renewals. Administration of specialty injectable medications covered through buy and bill and pharmacy benefit services was also implemented. From the start of MTM clinic on August 22 to March 31, pharmacists started new medications 71 times, increased doses 52 times, and decreased doses 5 times. Medication was discontinued on 16 occasions. 55 injections were administered by pharmacists. Immunizations, smoking cessation, and other interventions have also been incorporated into clinic visits. Further results in progress.

Conclusions: The creation of a 340B MTM clinic at BHDM has greatly expanded the clinical services pharmacists offer. Through collaborative care agreements, pharmacists were able to intervene and prevent potential adverse events and treatment failures from occurring. The challenges of creating MTM clinics including reimbursement, referral processes, and availability of resources can be justified by significant savings which were generated through 340B eligible scripts. Further conclusions in progress.

global: Y

11:00am – 11:15am L **Unraveling Allergies: Evaluating the Impact of a Penicillin Allergy Clarification Service** Parthenon 1

Moderators: Grace An
Presenters: Anny Nguyen
Evaluators: Helen Bryant

Title: Unraveling Allergies: Evaluating the Impact of a Penicillin Allergy Clarification Service

Authors: Anny Nguyen, Caitlin Ellis, Melissa Padgett, Colleen Courey

Objective: To evaluate the incidence of patients with low risk penicillin allergies to determine the potential benefit of implementing a direct oral challenge service.

Background: Many penicillin allergies are often misreported and are associated with antimicrobial resistance, poor health outcomes, increased length of stay, and increased healthcare costs. The incidence of a true penicillin allergy may be falsely elevated due to initial false labeling of allergies or age-related decline in sensitization. Therefore, the introduction of an allergy de-labeling program may be beneficial for patients with reported penicillin allergies.

Methods: This is a single-center, observational study conducted at a 515-bed academic hospital. Pharmacy surveillance software was utilized to identify adult patients with a documented allergy or intolerance to a penicillin antibiotic who were within 24 hours of hospital admission. Patients were then interviewed for allergy clarification. Exclusion criteria included those unwilling or unable to participate in the patient interview. The primary endpoint was the incidence of penicillin allergy de-labeling. The secondary endpoints included the number of patients appropriate for a direct oral challenge, based on their PEN-FAST scores, the total time spent on the intervention, and the 30-day readmission rate.

Results: Interviews were conducted between September 2024 to December 2024. In total, 244 patients were included in the study. Of these, 44 patients (18.0%) had their penicillin allergy de-labeled following an allergy clarification interview, which determined that their previous reaction was not a true allergy or that they had tolerated a penicillin-class drug since the initial reaction. Additionally, 164 patients (67.2%) were deemed suitable for a direct oral challenge. On average, each interview lasted 8.2 minutes, and 65 patients (26.6%) were readmitted within 30 days at our facility.

Conclusion: The allergy interviews have proven valuable in clarifying patients' true penicillin allergies and updating their medical records as necessary. This study suggests the implementation of a direct oral challenge service at this institution may be beneficial given the high incidence of patients with low risk penicillin allergies.

global: Y

11:00am – 11:15am D **Identifying the Incidence of Culture-Driven Infection After the Use of Probiotics in Neonates at a Level III Neonatal Intensive Care Unit** Athena J

Moderators: Justin Chen
Presenters: Angelique Holmes
Evaluators: Alyssa Huff

Objective:
Investigate the incidence of culture-proven infection in pre-term and VLBW and low birth weight (LBW) neonates in the NICU at USACWH

Self-Assessment Question:
What probiotic had the greatest incidence of positive cultures? A. Culturelle B. UP4 C. Ultimate Flora Baby

Background:
Pre-term neonates have an immature gut barrier and alterations in the microbiota increase their risk for morbidity and mortality. Probiotics are used to colonize the gastrointestinal tract with beneficial microorganisms to prevent complications such as necrotizing enterocolitis (NEC) and colonization of Clostridium difficile. Currently, the American Gastroenterological Association (AGA) and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) guidelines recommend probiotics in pre-term and low-birth weight neonates to prevent NEC in the hospitalized setting. A risk factor of probiotics in this patient population is the translocation of a probiotic species across their permeable barrier and out of the digestive tract. The University of South Alabama Children's and Women's Hospital (USACWH) used probiotics liberally in the neonatal intensive care unit (NICU) until the fall of 2023. Probiotic use ceased after the U.S Food and Drug Administration (FDA) issued a healthcare warning on probiotic use in hospitalized pre-term or very low birth weight (VLBW) infants due to the potential risk of invasive and potentially fatal disease from live bacteria or yeast. This study aims to investigate the incidence of culture-proven infection in pre-term and VLBW and low birth weight (LBW) neonates in the NICU at USACWH.

Methods:
This is a single-site, retrospective review of neonates admitted to a level III NICU between 2017 and 2024. The primary outcome was the incidence of positive cultures matching a probiotic species in preterm or VLBW and LBW infants. Pre-term neonates between 21 weeks to 38 weeks gestational age or LBW defined as < 2,500 grams, received > 72 hours of probiotics, and a positive culture matching the probiotic species were included. Patients were excluded if they were > 38 weeks gestational age, weighed > 2,500 grams, or received < 72 hours of probiotics. The key secondary data points include past medical history, type of probiotic, day of admission probiotics were initiated, duration of probiotic, type of culture, culture speciation, ICD-10 code for NEC, and cause of death. Statistical tests used were means and standard deviations for descriptive statistics, Naranjo criteria, means and standard deviations.

Results:
A total of 871 patients received probiotics. There was a total of 6 neonates with positive cultures matching the probiotic species. This correlates with an incidence rate of 0.69 new positive culture for every 100 patients. All 6 neonates with positive cultures received Ultimate Flora Baby (UFB), containing Bifidobacterium spp (B. infantis, B. breve, B. longum, B. rhamnoses, B. acidophilus) and Lactobacillus spp (L. rhamnoses, L. acidophilus). Out of the 871 patients, 726 (83%) patients received UFB, 133 (15%) patients received UP4, and 12 (2%) patients received Culturelle. A Naranjo score of 6 suggests the positive blood cultures were a probable adverse event from the probiotic. However, other factors might have contributed to the positive cultures. The results of the possible factors that may have contributed to the positive cultures are still pending.

Conclusion:
Among preterm, VLBW, and LBW infants receiving probiotics in the NICU at USACWH there was a low incidence rate of positive blood cultures. Factors that could have contributed to the positive cultures is still in progress.

global: Y

11:20am – 11:35am A **Clinical Impact of Pharmacist Involvement in Discharge Medication Reconciliation at a Rural Community Hospital** Olympia 1

Moderators: Marci Swanson, Nadia Hason

Presenters: Kyli Latimer

Title: Clinical Impact of Pharmacist Involvement in Discharge Medication Reconciliation at a Rural Community Hospital

Authors: Kyli Latimer, Abigayle Campbell

Background: Medication discrepancies occurring at hospital discharge have shown increased risk of adverse patient outcomes, hospital readmissions, and overall health care cost. Incorporation of a pharmacist within the discharge process can allow effective communication between transitions of care, prevent medication errors, and prevent patient harm. The objective of this study was to evaluate the impact of pharmacists on the discharge medication reconciliation process at a rural community hospital.

Methods: This was a single center, retrospective chart review, pre-post pilot implementation study taken place at a rural community hospital. The pilot implementation period was conducted from February 24th, 2025 to March 26th, 2025, and consisted of having a clinical pharmacist decentralized to four different medical or telemetry floors (non-intensive care units). Pharmacist responsibilities primarily included discharge medication reconciliation and patient education, renal dose adjustments, anticoagulation monitoring and management, and transitioning therapies from intravenous to oral (IV to PO) routes. Retrospective data was collected over a one-week period for both the pre- (September 18th, 2023 to September 25th, 2023) and post- (March 17th, 2025 to March 24th, 2025) pilot groups. Adult patients discharged from one of four medical or telemetry floors were included in the study. Patients were excluded if they were discharged from any other patient care floor or outside of the designated hours of pharmacist coverage (weekdays from 0700 to 1530). Any patients that were discharged to a skilled nursing or rehabilitation facility were also excluded from receiving medication education at discharge. The primary outcome was the percentage of patients who had pharmacist involvement in the discharge process, defined as receiving both discharge medication reconciliation and medication education. Secondary outcomes assessed included the total number of medication errors identified during discharge medication reconciliation, the type and associated harm of each error, as well as patient discharge location.

Results: A total of 170 patients were included in this study (93 patients in the pre-pilot group and 77 patients in the post-pilot group). Baseline characteristics were overall similar between groups. The percentage of patients that had both discharge medication reconciliation and medication education completed by a pharmacist increased by 16.6% (23.7% pre-pilot group vs. 40.3% post-pilot group). The number of medication errors identified at discharge was also higher in the post-pilot group compared to the pre-pilot group (22 (2.1%) vs. 7 (0.59%)). The most common type of medication error identified at discharge in both groups was ‘other’, often due to discrepancies with the frequency, directions, or patients’ preferred pharmacy at discharge.

Conclusion: In this study, a higher percentage of patients had a pharmacist involved in the discharge process during the post-intervention group compared to those patients in the pre-pilot group, which also resulted in an increase in the percentage of medication errors identified in the post-pilot group. Limitations of this study include it being a retrospective chart review with minimal sample size, reliance on pharmacy specific documentation, and the limited study period of review. Despite this, these results show the benefit of pharmacist involvement in the discharge process. Future directions include the optimization and standardization of the current discharge process as well as the implementation of a pharmacist-led discharge process.

Contact: kyli.latimer@selfregional.org

global: Y

11:20am – 11:35am B **Evaluation of Insulin Requirements After Initiation of GLP-1 Receptor Agonists Versus GLP-1/GIP Receptor Agonist** Athena D

Moderators: Stephanie Hopkins
Presenters: Omar Mouna
Evaluators: McKenzie Hodges

Title:
Evaluation of Insulin Requirements After Initiation of GLP-1 Receptor Agonists Versus GLP-1/GIP Receptor Agonist

Authors:

- **Omar Mouna, PharmD**
- **Kate O'Connor, PharmD, BCACP, BC-ADM**

Objective:
Determine the impact of initiating GLP-1 Receptor Agonists compared to GLP-1/GIP Receptor Agonists on total daily insulin requirements in adults with Type 2 Diabetes Mellitus after 6 months.

Self Assessment Question:
Does initiation of GLP-1/GIP receptor agonist therapy show statitistical significance in reducing insulin requirements at 6 months compared to initiation of GLP-1 receptor agonist therapy?

Background (168 words)
Incretin-based therapies, including GLP-1 receptor agonists (GLP-1 RAs) and the dual GLP-1/GIP receptor agonist (GLP-1/GIP RA), tirzepatide, are increasingly utilized in the management of type 2 diabetes mellitus (T2DM). These agents improve glycemic control and offer additional benefits, such as weight reduction and cardiovascular risk mitigation. For patients requiring insulin therapy, the initiation of GLP-1 RAs has demonstrated potential in reducing daily insulin requirements by enhancing endogenous insulin secretion and suppressing glucagon release. The recent introduction of tirzepatide, a dual incretin receptor agonist, has shown even greater efficacy in glycemic control and weight loss compared to traditional GLP-1 RAs in clinical trials. However, limited real-world data exist on the comparative impact of these therapies on insulin dose adjustments in patients already on insulin. Understanding the different impact of GLP-1 RAs versus GLP-1/GIP RAs on insulin requirements may guide therapy selection, optimize insulin regimens, and minimize dose-related side effects. This study aims to evaluate the impact of initiating these incretin-based therapies on daily insulin requirements in patients with T2DM.

Methods (182 words)
This was a single-center, IRB-approved, retrospective medical record review, conducted at Wellstar MCG Health's outpatient clinics, and included adult patients 18 years and older who were initiated on incretin-based therapy while concurrently being on insulin therapy between the dates of July 1, 2022 and December 31, 2023. Patients were excluded if they had type 1 diabetes, had insulin added to their regimen after initiating incretin-based therapy, were administering sliding scale prandial insulin, or began an oral GLP-1 RA. The primary outcome assessed was percent change in total daily insulin requirement from baseline in individuals who initiated GLP-1 RAs versus GLP-1/GIP RAs after 6 months of agent initiation. Secondary outcomes evaluated changes in hemoglobin A1c (HgbA1c) between the two groups from baseline to 6 months, requirement of additional antidiabetic medications after initiation of incretin-therapy at

6 months, and percentage of patients requiring insulin discontinuation after initiation of incretin therapy at 6 months. Continuous variables were analyzed using paired T-tests while categorical variables were assessed with chi-square. Multivariable regression was used to adjust for potential confounders. Statistical significance was set at $P < 0.05$.

Results (132 words)
A total of 130 patients were included, with 65 in each treatment group. Baseline characteristics, including age, baseline HgbA1c, weight, and total daily insulin dose, were similar between groups. At six months, individuals initiating GLP-1/GIP RA therapy experienced a significantly greater reduction in total daily insulin requirements compared to those initiating GLP-1 RA therapy (35.6% vs. 28.9%, $p = 0.018$). Insulin therapy was fully discontinued at 6 months in 24.6% of patients in the GLP-1/GIP RA therapy group versus 16.9% of patients in the GLP-1 RA therapy group. Five patients who initiated GLP-1/GIP RA therapy required additional antihyperglycemic agents while 7 patients in the GLP-1 RA therapy group required additional agents at 6 months. No significant difference in HgbA1c at 6 months was observed between groups (-0.81% vs. -0.84%, $p = 0.91$).

Conclusion (97 words)
Initiation of GLP-1/GIP RA therapy resulted in a significantly greater reduction in total daily insulin requirements compared to GLP-1 RA therapy after 6 months. Additionally, a higher percentage of patients in the GLP-1/GIP RA group were able to fully discontinue insulin, while the addition of other antihyperglycemic agents was similar between groups. Despite these differences, glycemic control, as measured by HgbA1c reduction, was comparable. These findings suggest that GLP-1/GIP RA therapy may be a more effective option for reducing insulin dependence in individuals with T2DM, potentially minimizing the burden of insulin therapy and the risk of hypoglycemia.

global: Y

11:20am – 11:35am B **Sodium-Glucose Cotransporter 2 (SGLT-2) Inhibitor Prescribing in Black/African American Veterans with Chronic Kidney Disease (CKD) and Type 2 Diabetes Mellitus (T2DM) Living in a Rural Area** Athena C

Moderators: Beth Phillips

Presenters: Madison Barrier, Madison Barrier

Title: Sodium-Glucose Cotransporter 2 (SGLT-2) Inhibitor Prescribing in Black/African American Veterans with Chronic Kidney Disease (CKD) and Type 2 Diabetes Mellitus (T2DM) Living in a Rural Area

Authors: Madison Barrier, Camille Robinette, Meghan Mark, Allison Strain

Objective: Evaluate and initiate SGLT-2 inhibitors in Black/African American Veterans with T2DM and CKD

Self-Assessment Question:
Which patient should be initiated on an SGLT-2 inhibitor?
A: 50 year old with T1DM and CKD, eGFR 45
B: 70 year old with T2DM and CKD, eGFR 15
C: 67 year old with T2DM and CKD, eGFR 35
D: 59 year old with T2DM and CKD, on dialysis

Background: SGLT-2 inhibitors reduce intraglomerular pressure and improve tubuloglomerular feedback resulting in delayed CKD progression in Veterans with and without T2DM. Approximately 1 in 3 adults with T2DM also have CKD with higher rates of Black/African American individuals experiencing CKD. Based on the 2022 Kidney Disease Improving Global Outcomes (KDIGO) guidelines, an SGLT-2 inhibitor is recommended for Veterans with CKD, T2DM, and eGFR greater than or equal to 20 mL/min/1.73m2.
Many Veterans at the Salisbury Veterans Affairs Health Care System (SVAHCS) are impacted by both T2DM and CKD. Approximately 20% of Veterans served by the SVAHCS live in rural areas and may have challenges accessing care. Offering telephone visits and mailing educational materials to rural
Veterans may improve access to preventative healthcare without the need for traveling to a physical location.

Methods: This quality improvement project will be conducted by enrolling Veterans via chart review to conduct telephone visits for SGLT-2 inhibitor education, prescribing, and follow-up. Veterans will be identified using the VA Academic Detailing Diabetes Patient Report with parameters for rurality, race, disease states (T2DM and CKD), and exclusion criteria. Veterans identified will be reviewed and assessed for inclusion in the project. Veterans will be contacted for an introduction to the population health clinic, project intention, and scheduling an initial visit with a pharmacist. The initial population health clinic visit will be conducted via telephone by a pharmacist to provide patient education and initiation of an SGLT-2 inhibitor, empagliflozin, in accordance with VA national formulary. A telephone follow-up scheduled for approximately one month after SGLT-2 inhibitor initiation will be used to assess tolerability and medication adherence. Further follow-up and management will be transitioned back to the Veterans' established primary care teams.

Results: A total of 45 Veterans were contacted based on the initial chart review, 20 agreed to appointments with a pharmacist to discuss the use of SGLT-2 inhibitors for CKD and T2DM and were subsequently included in the quality improvement project. The majority of patients were male 19 (95%) with an average eGFR of 51.85 mL/min/1.73m2 and A1c of 6.9%. During the initial visit with a pharmacist, 11 (55%) Veterans agreed to starting an SGLT-2 inhibitor. During all scheduled appointments, Veterans were provided verbal medication counseling, offered a pill box and/or testing supplies to assist with T2DM care if needed, and educational material was mailed after the conclusion of the visit for further review. Of the 11 patients who initiated an SGLT-2 inhibitor, 10 reported medication adherence (missing 2 or fewer days per week). At the time of follow-up, one Veteran reported an adverse effect (urinary tract infection) that resolved at subsequent follow-up. Follow-up renal function testing was performed between weeks 3 and 10 from medication initiation. Average eGFR decreased by 2.1 mL/min/1.73m2 as expected based on documented literature.

Conclusion: Based on the results of this quality improvement project, many Veterans are willing to initiate an SGLT-2 inhibitor for CKD and T2DM management. The most common reason for declining initiation was patient preference, followed by patients wanting to discuss with their primary care provider. Due to the small sample size and limited project duration, no direct therapeutic effect was measured in the results of this project.

global: Y

11:20am – 11:35am C **Use of Prophylactic Amiodarone for the Prevention of Atrial Fibrillation After Cardiac Surgery** Athena B

Moderators: Courtney Isom

Presenters: Savannah Salam

Evaluators: Jaime Shockley

Title: Use of Prophylactic Amiodarone for the Prevention of Atrial Fibrillation After Cardiac Surgery

Authors: Savannah Salam, Sydney Davis, Michael Bitonti, Lisa Curran, Paul Weldner

Objective: Discuss the potential benefit of routine oral amiodarone use for atrial fibrillation prophylaxis after cardiovascular surgery

Self Assessment Question: True or False: The use of oral amiodarone for atrial fibrillation prophylaxis should replace prophylactic beta blocker use in patients after cardiac surgery

Background: Amiodarone is a Vaughan-Williams Class III antiarrhythmic agent approved for the management of life-threatening ventricular arrhythmias but is commonly used for treatment of atrial fibrillation (Afib). Approximately 15-40% of patients develop postoperative Afib after cardiac surgery. The PAPABEAR trial found a significant reduction of postoperative Afib with oral amiodarone prophylaxis in patients undergoing nonemergent coronary artery bypass graft (CABG) and/or valve replacement/repair with or without beta blocker use. The 2023 ACC/AHA/ACCP/HRS Atrial Fibrillation Guidelines added a level IIa recommendation for the use of short-term prophylactic beta blockers or amiodarone in patients undergoing cardiac surgery who are at high risk for developing postoperative Afib. Our institution recently began use of amiodarone prophylaxis in select patients at surgeon discretion. The purpose of this review is to evaluate the impact of oral amiodarone for Afib prophylaxis after cardiac surgery.

Methods: This review was a single center, IRB reviewed, determined exempt, retrospective comparator evaluation conducted from July 1, 2024 to February 28, 2025. Adult patients who underwent CABG, valve replacement, or valve repair were included in this study. Patients were excluded if they had a history of Afib in the last 12 months, amiodarone use in the last 6 months, were on Vaughan- Williams Class I or III antiarrhythmic medications prior to procedure, required mechanical circulatory support, or if any ventricular or atrial arrhythmia was present before the procedure. Each patient was reviewed for demographic data, type of cardiac procedure, use of prophylactic amiodarone, development of Afib postoperatively, use of prophylactic beta blocker, and development of Afib or Aflutter within 30 days of hospital discharge. Included patients were stratified by use of prophylactic oral amiodarone. The prophylactic amiodarone standard order was 400 mg twice daily for five days. The length of amiodarone treatment and dose were adjusted based on clinical decision-making by the care team. The primary outcome was the incidence of postoperative Afib. Secondary outcomes include time to postoperative Afib, use of intravenous amiodarone, percentage of patients that discontinued prophylactic amiodarone, and readmission for atrial arrhythmias within 30 days of discharge from the index event.

Results: Of the 126 patients screened, 80 patients were included in this study. There were 30 patients in the amiodarone prophylaxis group and 50 patients in the standard of care group. Baseline patient characteristics were balanced between groups apart from smoking history (16% in amiodarone group vs. 70% in standard of care), history of heart failure (14% vs. 36%), and index event including a valve procedure (70% vs. 32%). Notably all patients received prophylactic beta-blockers per standard practice at our facility. The primary outcome occurred in 23.3% of the amiodarone prophylaxis group vs. 42% in the standard of care group (OR 0.42, 95% CI 0.15-1.14, p=0.09). There were no significant differences in the average time to postoperative Afib (78.8 hrs vs. 70 hrs, p=0.13) and average length of hospital stay (172.1 hrs vs. 154.2 hrs, p=0.39). Rates of post-discharge atrial arrhythmias were 13.3% in amiodarone group vs. 4.0% in standard of care (p=0.13). In the amiodarone

prophylaxis group, 3 patients discontinued amiodarone therapy, and 4 patients required a dose-reduction in amiodarone due to reported hypotension, heart block, and nausea.

Conclusions: The use of oral amiodarone prophylaxis may provide a strategy to reduce the incidence of atrial fibrillation after cardiac surgery. This intervention was well tolerated, though it would require further investigation to achieve statistical significance.

global: Y

11:20am – 11:35am R **Assessment of an AST:ALT Ratio for Predicting Clinical Recovery After Acetaminophen Poisoning** Athena J

Moderators: Justin Chen
Presenters: Andrew Norton, Andrew Norton
Evaluators: Alyssa Huff

Title:
Assessment of an AST:ALT Ratio for Predicting Clinical Recovery After Acetaminophen Poisoning

Authors:
Andrew Norton; Raymond Patterson; Jenna Jewett; Faisal S. Minhaj

Objective:
Evaluate the utility of an AST:ALT ratio for predicting clinical recovery after acetaminophen poisoning.

Self Assessment Question:
Based on the available evidence, should an AST:ALT ratio be used as a surrogate endpoint for determining when to discontinue NAC therapy?

Background:
Previously, a transaminase ratio of 0.4 or less was proposed as a treatment cutoff for recovery of acetaminophen (APAP) toxicity. This study aims to evaluate the suggested transaminase ratio of <0.4 in a broader population by including all patients with transaminitis thought to be caused by acetaminophen toxicity. We also aim to evaluate different transaminase ratio thresholds to determine if a different ratio is applicable in a patient population that primarily consists of non-severe acetaminophen poisoning.

Methods:
This was a retrospective study conducted by reviewing the electronic medical record of patients who presented to WKRMC between January 1, 2022, and May 1, 2024, and received at least one dose of N-acetylcysteine (NAC) for the treatment of suspected or confirmed APAP toxicity. A total of 84 patients were included in the analysis, with a minimum requirement of 10 patients who received extended NAC therapy (i.e., beyond the standard 72-hour oral course or 21-hour intravenous course). 34 out of 84 patients had at least 1 AST or ALT value of 100 IU/L or more and completed their NAC treatment at WKRMC were included in the primary endpoint. This was determined to be exempt from IRB review at Wellstar Kennestone Regional Medical Center.

Results:
Of the 84 patients that were included in this study, only 34 (41%) patients achieved an AST:ALT ratio of 0.4 or less at the completion of NAC therapy. The most identified co-ingestions included EtOH, NSAIDS, opioids, and benzodiazepines. Extended NAC therapy was utilized in 17 (20%) patients.

Conclusion:
Evaluation of a transaminase treatment ratio of 0.4 or less did not result in a viable endpoint for NAC therapy discontinuation in our patient population for APAP toxicity. Additionally, there was no other ratio threshold endpoint deemed clinically significant for NAC therapy discontinuation.

global: Y

11:20am – 11:35am R **Evaluating the Safety and Efficacy of Alteplase versus Tenecteplase Administration in the Management of Acute Ischemic Stroke** Athena I

Moderators: Vanessa Velazco

Presenters: Brooke Landry

Evaluators: Adam Sawyer

Title: Evaluating the Safety and Efficacy of Alteplase versus Tenecteplase in the Management of Acute Ischemic Stroke

Authors: Brooke Landry, Matthew McAllister, Shae Tirado, McKenzie Hodges

Background: Acute ischemic stroke (AIS) is a medical emergency caused by a sudden blockage or reduction in blood flow within the brain. Early medical treatment is crucial for reducing morbidity and mortality following AIS. Thrombolytics are the mainstay pharmacologic agent utilized in patients presenting within 4.5 hours of symptom onset. Alteplase and tenecteplase are two thrombytics FDA-approved for the management of AIS. This study aimed to compare outcomes of alteplase versus tenecteplase for AIS, focusing on time to administration, functional outcomes, and incidence of adverse events. The findings of this study may provide additional comparative evidence between these two thrombolytic agents, adding to the growing body of evidence in the treatment of AIS.

Methods: A multi-center, retrospective chart review was performed of individuals who received alteplase from September 1, 2023 to November 30, 2023 and tenecteplase from January 1, 2024 to March 31, 2024 for acute ischemic stroke within Piedmont Health System. We compared door-to-needle times, incidence of symptomatic intracranial hemorrhage, rate of successful reperfusion, mRS at 90-days, and incidence of angioedema between study arms. A subgroup analysis was conducted on patients who underwent mechanical thrombectomy following thrombolytic administration. Door-to-needle times and mRS at discharge/90 days were evaluated utilizing an independent t-test. A chi-squared test was used to assess incidence of symptomatic intracranial hemorrhage, incidence of angioedema, and rate of successful reperfusion.

Results: There were a total of 314 patients included in the study, 159 patients who received alteplase and 155 who received tenecteplase. Baseline characteristics were similar between groups. For the primary outcome of door-to-needle time, average time for the alteplase and tenecteplase arms were 50 minutes and 49 minutes, respectively. This difference was not statistically significant. For secondary outcomes, symptomatic hemorrhagic conversion was identified in 7 alteplase recipients and 5 tenecteplase recipients, average discharge/90-day mRS was 2.6 in the alteplase arm and 2.5 in the tenecteplase arm, and angioedema occurred in 1 alteplase recipient and 2 tenecteplase recipients. None of the secondary outcomes were statistically significant. In the subgroup analysis of patients who underwent mechanical thrombectomy, symptomatic hemorrhagic conversion was identified in 4 alteplase recipients and 1 tenecteplase recipient, average discharge/90-day mRS was 3.3 in the alteplase arm and 4.0 in the tenecteplase arm, and successful reperfusion was achieved in 14 alteplase recipients and 13 tenecteplase recipients. None of the subgroup outcomes were statistically significant.

Conclusion: This study found no difference in door-to-needle times between alteplase and tenecteplase. Additionally, no differences were seen in secondary safety and efficacy outcomes including incidence of angioedema, rate of symptomatic hemorrhagic conversion, mRS at discharge/90 days, or rate of successful reperfusion. These results suggest that tenecteplase is a safe and effective alternative thrombolytic to alteplase for the management of acute ischemic stroke.

global: Y

11:20am – 11:35am R **Evaluation of intravenous thrombolytic administration for acute ischemic stroke in patients with NIHSS score 0-5** Athena H

Moderators: Dustin Bryan
Presenters: Xuyen Nguyen
Evaluators: Jenna Jewett

Title: Evaluation of intravenous thrombolytic administration for acute ischemic stroke in patients with NIHSS score 0-5

Authors: Xuyen Nguyen, Parth Parikh, Morgan Weithman, Haley Smith, Jamie Wagner, Michael Loewe, Victoria Fontenot, Amy booth, Jamie Landry, Lynette
Obey, and Greggory Davis

Objective: To evaluate the safety and efficacy of intravenous thrombolytic therapy in stroke patients with NIHSS 0-5

Background: Approximately 87% of all stroke cases are acute ischemic stroke (AIS), and 13% are hemorrhagic. Current guidelines recommend intravenous
thrombolytic (IVT) therapy in patients with AIS who present within 4.5 hours of severe or disabling symptoms. However, more than 50% of patients with AIS
present with mild or minor symptoms (with a National Institute of Health Stroke Score, or NIHSS, of 0-5), and the guidelines do not have a strong
recommendation for the use of IVT therapy in this patient population due to conflicting evidence. Therefore, this research project aims to determine the efficacy and safety of IVT therapy in patients with an initial NIHSS of 0-5.

Methods: A retrospective chart review was performed to identify patients admitted to the Franciscan Missionaries of Our Lady Health System and St. Dominic
Jackson Memorial Hospital between 01/01/2020 and 12/31/2024. Patients were included if they were 18 years or older, presented within 4.5 hours with mild or minor stroke symptoms (NIHSS 0-5), AIS was confirmed by imaging, and patients received IVT therapy. Patients were divided based on their initial NIHSS into
either NIHSS 3-5 or NIHSS 0-2 groups and were evaluated with a predetermined 2:1 ratio, due to fewer anticipated patients in the NIHSS 0-2 group. The primary
endpoint was modified Rankin Scale (mRS) score of 0-1 at 90 days. Secondary endpoints include mortality at 90 days, in-hospital death, recurrent stroke,
symptomatic intracranial hemorrhage, hemorrhagic transformation, early neurological deterioration, early neurological improvement, NIHSS 0 at discharge, mRS at 90 days, and time to IVT administration.

Results: A total of 58 patients were included in this study, with 40 patients in the NIHSS 3-5 group and 18 patients in the NIHSS 0-2 group. 11 patients in the 0-2 group and 29 patients in the 3-5 group achieved mRS of 0-1 at 90 days. Overall, compared to patients in the NIHSS 0-2 group, the patients in the 3-5 group did not have a higher odd of having mrs 0-1 at 90 days, as shown by an adjusted odd ratio of 1.75, 95% confident interval of 0.52-5.79, and a p value of 0.4. No deaths were observed during hospital stay and at 90 days. Hemorrhagic conversion occurred in 5 (13%) of patients in the NIHSS 3-5 group and in 1 (5.6%) of patients in the NIHSS 0-2 group. Recurrent stroke occurred in 5 (13%) of patients in the NIHSS 3-5 group and did not occur in the NIHSS 0-2 group. Median time to IVT administration was 39 minutes in the NIHSS 3-5 group and 51 minutes in the NIHSS 0-2 group.

Conclusion: Among patients with NIHSS 0-5 treated with IVT therapy, there were no differences in functional

outcome at 90 days between the NIHSS 3-5 group and the NIHSS 0-2 group. No meaningful differences in secondary outcomes were observed. In conclusion, further studies with a larger sample size are still needed to support an informed decision to administer IVT therapy in this patient population.

global: Y

11:20am – 11:35am R **Feasibility and Impact of a Pharmacist-Driven Fosphenytoin Dosing and Monitoring Program** Athena G

Moderators: James Holland

Presenters: Tristan Underwood

Evaluators: Haley Smith

TITLE: Feasibility and Impact of a Pharmacist-Driven Fosphenytoin Dosing and Monitoring Program

AUTHORS: Tristan Underwood, Vince Buttrick, Erik Turgeon

OBJECTIVE: Describe the benefits of implementing a pharmacist-driven fosphenytoin dosing and monitoring program.

BACKGROUND: Fosphenytoin requires careful monitoring due to its narrow therapeutic range and complex pharmacokinetics. Studies have demonstrated that pharmacist-directed dosing programs can improve dosing accuracy, optimize serum levels, and reduce adverse events. The purpose of this study was to evaluate the impact of a pharmacist-driven fosphenytoin dosing and monitoring program on adherence to FDA approved fosphenytoin dosing and recommended lab monitoring for the treatment of seizures.

METHODS: Data was collected for adult patients admitted to the hospital who received at least one dose of fosphenytoin between July 2023 – July 2024 and November 2024 – March 2025. The intervention was a pharmacist-driven, hospital-wide fosphenytoin dosing and monitoring program that included a fosphenytoin order panel and an automatic in-basket message notifying pharmacy of phenytoin levels. The primary endpoint was to compare adherence to FDA approved fosphenytoin dosing and recommended lab monitoring in the pre-implementation and post-implementation groups. The secondary endpoints included frequency of re-current seizures and number of fosphenytoin related pharmacist interventions.

RESULTS: In progress.

CONCLUSIONS: In progress.

global: Y

11:20am – 11:35am | **C1 Esterase Inhibitor for Angiotensin-Converting Enzyme Inhibitor-Induced Angioedema in Intubated Patients at a Community Teaching Health System** Athena A

Moderators: Ben Albrecht
Presenters: Christopher Reagin
Evaluators: Marcus Mize

Title: C1 Esterase Inhibitor for Angiotensin-Converting Enzyme Inhibitor-Induced Angioedema in Intubated Patients at a Community Teaching Health System

Authors: Christopher Reagin; Phillip Mohorn; Leslie Roebuck

Objective: Evaluate the use, clinical efficacy, and cost of C1 esterase inhibitors in patients intubated for ACEi-induced angioedema by assessing the duration of mechanical intubation

Self Assessment Question: What was the impact of C1 esterase inhibitor (C1EI) administration on the duration of mechanical ventilation in patients intubated for ACE inhibitor-induced angioedema?

Background: ACE inhibitor induced (ACEi-induced) angioedema is a rare but potentially life-threatening condition that can cause airway obstruction and require intubation. Its underlying mechanism involves bradykinin accumulation, leading to increased vascular permeability and tissue swelling. The management of ACEi-induced angioedema primarily focuses on supportive care, including airway management, cessation of the offending agent, and symptomatic relief. However, no FDA-approved treatments exist. C1 esterase inhibitor (C1EI) has been explored as a potential therapy, but its role remains unclear based on available literature. A retrospective analysis at our institution previously examined the efficacy of C1EIs in preventing mechanical ventilation in patients with ACEi-induced angioedema. Notably, some patients received the medication after they had already been intubated, which raised questions about the optimal timing of administration and its effect on outcomes, such as the duration of mechanical ventilation. This study aimed to assess C1EI's effectiveness in intubated patients, focusing on duration of mechanical ventilation to clarify its clinical utility.

Methods: This was a retrospective, observational, cohort study conducted at a community teaching health system from January 2017 to August 2024. Patients intubated for ACEi-induced angioedema were identified through electronic health records and stratified into C1EI-treated and non-C1EI-treated groups. Both groups received standard of care (epinephrine 0.2 to 0.5 mg intramuscularly or 0.05 to 0.1 mg intravenously, corticosteroids at ≥ 50 to 100 mg hydrocortisone equivalent, a histamine-1 receptor antagonist, and a histamine-2 receptor antagonist). The primary outcome was duration of mechanical ventilation. Secondary outcomes included ICU length of stay (LOS), hospital LOS, in-hospital mortality, and angioedema-related medication costs. Continuous variables were analyzed using the Mann-Whitney U test, while categorical data were compared using Chi-square or Fisher's exact test, with statistical significance set at $p<0.05$.

Results: A total of 22 patients met inclusion criteria (C1EI: 15, non-C1EI: 7). Median duration of mechanical ventilation was similar between groups (C1EI: 1.3 days [IQR: 1.1–1.6] vs. non-C1EI: 1.7 days [IQR: 1.3–2.3], $p=0.078$). No significant differences were observed in ICU LOS (C1EI: 2.3 days [IQR: 1.4–2.8] vs. non-C1EI: 3.0 days [IQR: 2.1–5.1], $p=0.162$), hospital LOS (C1EI: 4.1 days [IQR: 2.1–4.7] vs. non-C1EI: 3.5 days [IQR: 3.2–9.1], $p=0.581$), or in-hospital mortality (0% in both groups). However, median medication cost was significantly higher in the C1EI group ($12,743.8 [IQR: $9,117.5–$13,381.6] vs. $32 [IQR: $11.5–$68.5], $p<0.001$).

Conclusion: In this retrospective cohort study, the administration of C1EI did not significantly reduce the duration of mechanical ventilation or other clinical outcomes in patients intubated for ACEi-induced angioedema. However, its use was associated with substantially higher medication costs. Larger, prospective or propensity-matched studies are needed to clarify the role of C1EI in this patient population.

global: Y

11:20am – 11:35am L **An Evaluation of Prophylactic Enoxaparin Dosing in Patients with Obesity** Parthenon 2

Moderators: Kristen Turner
Presenters: Jeff Bruni, Jeff Bruni
Evaluators: Jonathan Alligood

Title: An Evaluation of Prophylactic Enoxaparin Dosing in Patients with Obesity

Authors: Jeff Bruni, Elizabeth Oglesby, Hong Duong, Makayla Sborov, Catherine Childre, Will Johnson

Background: Enoxaparin is routinely prescribed for patients to prevent deep vein thromboses (DVTs). While the current prophylactic dosing strategy of enoxaparin is seemingly concise for adults, the optimal dosing for patients with obesity is not well established. Standard enoxaparin (Lovenox) doses may be inadequate in this patient population, requiring weight-based adjustments for effective anticoagulation.

Methods: A retrospective study of inpatient adults with obesity was performed on patients admitted to the infirmary Health system with an order of enoxaparin for VTE prophylaxis. Data was randomly collected from a total of 466 patients with obesity over a period of 6 months from January 1, 2024, to June 30, 2024. Obesity was defined as BMI greater than or equal to 30 kg/m^2. Study variables collected included demographics, length of stay, medical history (including previous history of stroke or VTE), admitting diagnosis, and baseline weight in kilograms. The primary outcome was development of VTE during hospital encounter or within thirty days of discharge. Dosing strategies evaluated included: enoxaparin 30 mg, 40 mg, or 60 mg at a frequency of either daily or twice daily. Secondary outcomes included major bleeding, minor bleeding, ischemic stroke, and all-cause mortality. Patients who were pregnant, who had a serum creatinine greater than 2mg/dL, who were prescribed enoxaparin with the intent of VTE treatment, or who had documented heparin-induced thrombocytopenia prior to or during treatment were excluded.

Results: A total of 466 patients were prescribed enoxaparin for prophylaxis between the designated time frame. 131 of those patients met exclusion criteria. Of the 335 patients included, a total of 9 experienced a VTE within 30 days (providing an overall VTE rate of 2.7%).

Conclusion: The evaluated study population had a low rate of VTE irrespective of enoxaparin dosing strategy, admitting diagnosis, or BMI when compared to the national average. A superior dosing regimen for prescribing prophylactic enoxaparin in patients with obesity remains to be unclear.

global: Y

11:20am – 11:35am L **Evaluation of Midodrine Utilization in General Medicine Patients Admitted with Sepsis** Olympia 2

Moderators: Sheema Hallaji
Presenters: Martine Abouchabki
Evaluators: Elizabeth Oglesby

Title: Evaluation of Midodrine Utilization in General Medicine Patients Admitted with Sepsis

Authors: Martine Abouchabki, Stefanie Sarratt, Timothy Amison

Background: Guidelines define sepsis as life-threatening organ dysfunction secondary to a dysregulated host response to infection. Septic shock is clinically recognized by persistent hypotension requiring vasopressors to maintain mean arterial pressure (MAP) at or above 65 mmHg despite adequate volume resuscitation. Current management of hypotension in sepsis includes fluid resuscitation to improve organ perfusion, appropriate source control, antibiotics, and maintaining MAP > 65 mmHg. Hypotension may persist after appropriate volume administration, necessitating intravenous vasopressor therapy and escalation of care. Literature has reviewed midodrine as an adjunct therapy for liberation from vasopressor therapy. It is unclear whether midodrine can be used as an alternative to vasopressor therapy in patients with sepsis. The purpose of this study was to evaluate the impacts of midodrine utilization on resolution of hypotension in patients with sepsis.

Methods: This was a single-center, retrospective cohort study evaluating the utilization of midodrine therapy in general medicine patients admitted with sepsis and sustained hypotension after fluid resuscitation. Patients 18 years or older who were admitted to a general medicine service with a primary diagnosis of sepsis or septic shock were eligible for enrollment. Patients were excluded if they received vasopressors in the emergency department prior to midodrine initiation, had a known allergy to midodrine, or were on midodrine therapy for other indications. The primary outcome was time to resolution of hypotension. Secondary outcomes include in-hospital mortality, hospital length of stay, time to vasopressor initiation, total duration of vasopressor therapy, and time to ICU admission. The safety outcomes evaluated were bradycardia and hypertension after initiation of therapy.

Results: Among the 153 patients initially reviewed, 118 individuals were excluded for various reasons. Of the 35 patients included, 28 were included in the midodrine group and 7 were included in the midodrine followed by a vasopressor group. The primary outcome, median time to resolution of hypotension for the midodrine followed by vasopressor group was 6.7 hours compared to 3.15 hours in the midodrine only group (P-value = 0.2009). The results for the midodrine followed by vasopressor group versus midodrine only for the secondary outcomes of in-hospital mortality (0% vs 14.3%), hospital length of stay (19% vs 7%), time to vasopressor (15 hours), time to ICU admission (15 hours vs 15 hours), total duration of vasopressor utilization (15 hours), and MAP at discontinuation of midodrine $\geq$ 65 (57% vs 79%) were also calculated. Safety outcomes evaluated included bradycardia (14% vs 11%) and hypertension after initiation of midodrine therapy (0% vs 14%).

Conclusion: In this retrospective study of general medicine patients admitted with sepsis, there was no significant difference in time to resolution of hypotension between patients that received midodrine followed by vasopressor therapy compared to midodrine therapy alone. Of note, the midodrine only group had fluctuating improvement in hypotension after initially meeting the primary outcome, in addition to a lack of comparison of severity of illness between the groups. It is also important to note that this trial was underpowered due to limited patient enrollment, primarily due to the lack of eligible participants in the midodrine followed by vasopressor group. Based on these findings, additional studies are needed to further identify any utility in this patient population.

mabouchabki@srhs.com

global: Y

11:20am – 11:35am L **Evaluation of Safety and Efficacy of Venous Thromboembolism Prophylaxis with Unfractionated Heparin versus Enoxaparin in Obese Patients** Parthenon 1

Moderators: Grace An
Presenters: Danielle Wilson
Evaluators: Helen Bryant

Title: Evaluation of Safety and Efficacy of Venous Thromboembolism Prophylaxis with Unfractionated Heparin versus Enoxaparin in Obese Patients
Authors: Danielle Wilson; Rebecca Rainess
Residency: AdventHealth Orlando

Background/Purpose: Venous thromboembolism (VTE) is a major cause of inpatient mortality. Obesity has been shown to be a strong, independent risk factor for the development and recurrence of VTE. Anticoagulation dosing strategies for extremes of body habitus are controversial and inconsistent across guidelines. Current literature has mainly included bariatric surgical patients as the study population and evaluation of VTE prophylaxis dosing strategies in overall hospitalized patients with obesity is lacking. The objective of this study was to evaluate the safety and efficacy of parenteral agents utilized for VTE prevention in hospitalized patients with obesity.

Methods: This study was a multi-center, retrospective chart review of adult obese patients with a body mass index (BMI) greater than 30 kg/m2 that received parenteral anticoagulation for VTE prophylaxis at an AdventHealth Central Florida division or West Florida division hospital between March 1st, 2024, and August 31st, 2024. Patients who were pregnant, diagnosed with a hypercoagulable state, had history of heparin induced thrombocytopenia (HIT), developed HIT during the encounter, had a baseline of less than 50,000 platelets per microliter, and those who missed ≥ 2 doses of parenteral anticoagulation within a 48-hour period while the medication order was active were excluded. Augmented dosing strategies were defined as heparin 7,500 units subcutaneous (SQ) every 8 hours and enoxaparin ≥ 40 mg SQ every 12 hours. Traditional dosing strategies were defined as heparin 5,000 units SQ every 8 hours, enoxaparin 30 mg SQ every 12 hours, and enoxaparin 40 mg SQ daily. The primary outcome was the occurrence of VTE during hospitalization. Secondary outcomes included incidence of bleeding events and mortality. Bleeding events were further categorized into major and minor bleeding events.

Results: A total of 1,131 patients were screened, 523 patients did not meet inclusion criteria and 348 were excluded to achieve a sample size of 260 patients. Baseline characteristics of the entire sample include a mean age of 58 (± 14) years, 104 (40.0%) were male, 137 (52.7%) were Caucasian, and 31 (11.9%) had a reported history of VTE. The median weight and BMI of the sample were 130.5 kg and 46.1 kg/m2, respectively. The augmented dosing cohorts included patients with greater BMI and younger ages as opposed to the traditional dosing cohorts. There was not a significant difference in occurrence of VTE events during hospitalization between the augmented and traditional dosing cohorts, with one VTE event occurring in each group (p = 1.00). Incidence of bleeding events were also not significantly different between the augmented dosing cohort and traditional dosing cohort, with three reported minor bleeding events occurring in both groups (p = 1.00). When comparing the two anticoagulants, the incidence of VTE events were the same (p = 1.00). However, 4 minor bleeding events occurred in the group receiving heparin while the enoxaparin group had 2 reported minor bleeding events (p = 0.41). There were no mortalities reported due to major bleeding or VTE event.

Conclusion*:* In this study of hospitalized patients with obesity, there were no differences found between the incidences of VTE events nor bleeding events when comparing augmented parenteral anticoagulant dosing strategies to traditional dosing strategies for VTE prophylaxis.

Presentation Objective: Describe the factors that increase the risk of thrombosis in patients with obesity.

Self-Assessment: What of the following is not a mechanism that contributes to an increased risk of thrombosis in patients with obesity?

1. **Decreased activation of platelets**
2. **Pro-inflammatory properties of adipose tissue**
3. **Alterations of pharmacokinetic and pharmacodynamic properties of anticoagulants**
4. **Increased adhesiveness of platelets**

global: Y

11:40am – 11:55am B **Assessing Renal Function After Hepatitis C Treatment with a Pangenotypic Direct-Acting Antiviral: Sofosbuvir/Velpatasvir and Glecaprevir/Pibrentasvir** Athena C

Moderators: Beth Phillips

Presenters: Chloe McGee, Chloe McGee

Title: Assessing Renal Function After Hepatitis C Treatment with a Pangenotypic Direct-Acting Antiviral: Sofosbuvir/Velpatasvir and Glecaprevir/Pibrentasvir

Authors: Chloe McGee, Charity Nora, Karli Nelson

Background: The 2023 American Association for the Study of Liver Diseases/Infectious Diseases Society of America (AASLD/IDSA) guidelines for the treatment of hepatitis C virus (HCV) recommend the use of pangenotypic direct acting antivirals (DAAs), such as sofosbuvir/velpatasvir (SOF/VEL) and glecaprevir/pibrentasvir (GLE/PIB), for all six major HCV genotypes. Treatment success is defined as undetectable HCV RNA levels at twelve weeks after treatment end, also known as sustained virologic response (SVR). In addition to impacting the liver, HCV has been associated with other negative effects including an increased risk of developing chronic kidney disease (CKD). While DAAs have been studied for safety and efficacy among patients with diagnosed CKD, there is a lack of data on the impact of HCV treatment with a pangenotypic DAA on renal function. The purpose of this study is to determine if successful treatment of HCV with a pangenotypic DAA leads to an improvement in renal function.

Methods: This was an IRB approved, observational, single center, retrospective chart review, which included adults eighteen years and older who achieved a twelve-week SVR after treatment of HCV with a pangenotypic DAA (GLE/PIB or SOF/VEL) between January 1, 2017 and January 1, 2024. Exclusions included non-compliance to the treatment regimen, history of kidney or liver transplant, end stage renal disease, or previous HCV treatment. The primary outcome was the change in serum creatinine from baseline to twelve-week SVR. Secondary endpoints included change in estimated glomerular filtration rate, percentage of patients achieving a 0.3 mg/dL or greater decrease in serum creatinine and change in chronic kidney disease classification. Data analysis to include descriptive statistics and paired t-tests as appropriate.

Results: A total of seventy-seven patients were included (44 in the SOF/VEL group and 30 in the GLE/PIB group). At baseline, over 90% of patients had an eGFR >60 ml/min/1.73m2. The median serum creatinine increased from 0.82 mg/dL at baseline to 0.88 mg/dL at 12 week SVR ($p < 0.001$). The median eGFR decreased from 95.5 mL/min/1.73 m2 to 88.0 mL/min/1.73 m2 at 12 week SVR ($p < 0.001$). 60% of patients did not have a change in their CKD eGFR category from baseline to 12 week SVR.

Conclusion: While a statistically significant worsening of renal function was detected, the clinical significance of a 0.6 mg/dL increase in serum creatinine is low. Additionally, when reviewing the change in CKD eGFR category, the majority of patients did not have a change in category. Based on these results, successful treatment of HCV with SOF/VEL or GLE/PIB did not result in a clinically significant change in renal function.

global: Y

11:40am – 11:55am B **Evaluation of a Medication Synchronization Program as a Tool for Identifying Patients at Increased Risk for Type 2 Diabetes** Athena D

Moderators: Stephanie Hopkins
Presenters: Catie Tuori
Evaluators: McKenzie Hodges

Title:

Evaluation of a Medication Synchronization Program as a Tool for Identifying Patients at Increased Risk for Type 2 Diabetes

Authors:

Catie Tuori
Lena McDowell
Courtney E. Gamston
Kimberly Braxton Lloyd

Background:

The Centers for Disease Control and Prevention estimates that 8.7 million adults have undiagnosed diabetes, and 87.8 million adults have undiagnosed prediabetes. Delayed identification is associated with increased risk for poor outcomes, making routine screening for these conditions vital. Due to the accessibility of community pharmacists, there exists the opportunity to improve identification of undiagnosed diabetes and pre-diabetes through screening services.

Objective:

The purpose of this study is to assess the implementation of a community pharmacy-based diabetes risk evaluation quality improvement initiative.

Methods:

During a regularly scheduled medication synchronization call, patients 35 years or older without diabetes and not taking any diabetes medications were screened for diabetes risk using the American Diabetes Association “Type 2 Diabetes Risk Test.” Individuals identified at increased risk were invited to have their A1c checked during medication pickup at the pharmacy. Patients with A1c at diabetes (≥ 6.5%) or prediabetes (5.7-6.4%) levels were referred to their primary care provider for follow up or to a Diabetes Prevention Program, respectively. Patients with an A1c value within the normal range (<5.7%) were counseled on healthy lifestyle measures. The RE-AIM framework was utilized to evaluate service implementation. Reach was measured as the number of patients eligible for inclusion in the service, successfully screened, and the number and percentage that consented to A1c testing. Effectiveness outcomes include the number of patients identified at increased risk and the percentage identified at increased risk with a prediabetes- or diabetes-level A1c. Adoption was measured as the number of pharmacy staff members involved in A1c screening and qualitative evaluation of staff feedback. Implementation was measured as the percentage of eligible medication synchronization encounters that included screening and the number of staff-reported deviations from the planned implementation process. All outcomes were reported as descriptive statistics.

Results: In Progress

global: Y

11:40am – 11:55am

Y **Impact of Educational Sources on Patient Knowledge and Confidence with Compounded Medications** Athena B

Moderators: Courtney Isom
Presenters: Kayla Garris, Kayla Garris
Evaluators: Jaime Shockley

Title: Impact of Educational Sources on Patient Knowledge and Confidence with Compounded Medications

Author: Kayla Garris

Objective: The primary objective of this study is to determine how the source of education about compounded medications influences patient confidence and knowledge in compounded medications.

Self-Assessment Question: Do patients feel more confident in their compounded medications after receiving information from their healthcare provider or pharmacist?

Background: Compounded medications account for 1% to 3% of all written prescriptions in the United States. For example, patients with allergies to certain dyes, diluents, binding agents or other inactive ingredients may not be able to tolerate commercially available products. For patients who are unable to take commercially available medications, compounding pharmacies across the United States have been able to fill in the gaps to help provide customized prescriptions. The decision to utilize compounded medication is not solely driven by pharmacists as physicians and patients are essential in the conversation about the use of compounds. Physicians must have a basic understanding of the risks and benefits associated with compounded medications to guide therapeutic decision making and advise their patients. While compounded medications are able to fill in gaps for medically necessary alternatives to commercially available medications, it is important to ensure that patients are knowledgeable about their compounds. The purpose of this study is to assess how the source of education about compounds influences patient confidence and knowledge in compounded medications.

global: Y

11:40am – 11:55am R **A comparison of bivalirudin versus unfractionated heparin for anticoagulation in adult patients requiring venoarterial extracorporeal membrane oxygenation** Athena I

Moderators: Vanessa Velazco
Presenters: Landry Slaughter
Evaluators: Adam Sawyer

Title: A comparison of bivalirudin versus unfractionated heparin for anticoagulation in adult patients requiring venoarterial extracorporeal membrane oxygenation

Authors: Landry Slaughter, PharmD, MMHC; Andrew McRae, PharmD, BCCCP; Lindsey Tolbert, PharmD, BCCP; Aaron Williams, MD; Michelle Miller, PharmD, BCCCP

Background: Extracorporeal membrane oxygenation (ECMO) is a form of life support in patients with cardiac and/or respiratory insufficiency that precludes adequate gas exchange or perfusion. Cannulation onto the ECMO device is an invasive procedure, in which the mechanical design of the circuit allows nonbiologic material to interface with blood creating a highly thrombogenic process. It is imperative to anticoagulate these patients to mitigate thrombosis and manage the leading complication of systemic anticoagulation, bleeding. Despite the recognition of this challenge by the Extracorporeal Life Support Organization (ELSO), minimal high-quality, prospective literature has been published. What exists is retrospective in nature, and anticoagulation is evaluated in mixed ECMO configurations, isolated pediatric, or mixed adult and pediatric populations, or isolates specific ECMO indications, such as cardiogenic shock. This gap in literature leaves uncertainty concerning the most safe and effective anticoagulation strategies in non-cardiogenic shock indications for adult venoarterial ECMO.

Methods: This retrospective study was performed from May 2021 to September 2024 at an academic medical center that included adult patients supported with venoarterial ECMO (VA-ECMO). The primary outcome was the incidence of in-circuit thrombosis per ECMO day defined as the incidence of oxygenator exchange. Secondary safety outcomes included bleeding per ELSO criteria and thrombotic complications.

Results: In progress

Conclusion: In progress

global: Y

11:40am – 11:55am R **Comparison of Alteplase versus Tenecteplase for Treatment of Acute Ischemic Stroke at a Large Community Hospital** Athena G

Moderators: James Holland
Presenters: Abigail Edwards
Evaluators: Haley Smith

Title: Comparison of Alteplase versus Tenecteplase for Treatment of Acute Ischemic Stroke at a Large Community Hospital

Authors: Abigail Edwards, Rachel Settle, Anne Astin, Anna-Kathryn Priest

Background: Although tenecteplase lacks FDA approval for acute ischemic stroke, the evidence available suggests tenecteplase is non-inferior to alteplase and potentially more efficacious in patients with large vessel occlusion strokes. The 2019 American Heart Association/American Stroke Association and 2023 European Stroke Organization Recommendations currently state that tenecteplase is a reasonable alternative over alteplase for use in acute ischemic stroke. In November 2023, the Baptist Health System transitioned to tenecteplase from alteplase for eligible patients with acute ischemic stroke. The purpose of this study is to compare the efficacy and safety of alteplase versus tenecteplase for acute ischemic stroke in the Baptist Health System.

Methods: This is an institutional review committee approved retrospective, single-center observational cohort study using electronic health records of adult patients 19 years of age or older within the Baptist Health System before and after the transition to tenecteplase for acute ischemic stroke. Patients were included if they had a documented NIHSS score and received either tenecteplase or alteplase for acute ischemic stroke. Data on tenecteplase was collected between November 2023 and June 2024, and an equal number of patients who received alteplase was collected in the months prior to the system-wide change.

Results: Of the 136 electronic medical records reviewed, 94 met inclusion criteria. The average change in NIHSS score was -4.5 in the tenecteplase group versus -3.9 in the alteplase group. There was a total of 5 bleeding events in the tenecteplase group versus 10 in the alteplase group. When comparing clinically significant bleeds (≥ 4 increase in NIHSS), tenecteplase had 1 while alteplase had 2 bleeding events that met criteria. Neither the tenecteplase or alteplase group had a documented angioedema event.

Conclusion: Our study found that tenecteplase had a similar efficacy compared to alteplase when used for acute ischemic stroke in the Baptist Health System. Tenecteplase also had a comparable, if not slightly better, safety profile.

global: Y

11:40am – 11:55am R **Evaluation of Low-Dose Ketamine for Pain Managment in the Emergency Department: Impact on Opioid Requirements** Athena H

Moderators: Dustin Bryan
Presenters: Valery Cepeda
Evaluators: Jenna Jewett

Title: Evaluation of Low-Dose Ketamine for Pain Managment in the Emergency Department: Impact on Opioid Requirements

Authors: Valery Cepeda, Emily Harman

Objective:

Describe the use of pain-dose ketamine in the Emergency Department and impact on outpatient opioid requirements.

Self-Assessment Question:

True or False: This study found the use of pain-dose ketamine resulted in lower MME requirements both in the ED and in outpatient prescriptions.

Background:

Ketamine, traditionally used as a dissociative anesthetic for sedation and anesthesia, has gained attention for its off-label use in pain management. Its NMDA receptor antagonism provides effective analgesia, making it a promising alternative or adjunct to opioids, particularly when opioids are less effective or carry a high risk of adverse effects. This study aimed to evaluate whether low-dose (0.1-0.3 mg/kg IV) ketamine could reduce opioid requirements compared to opioids alone in emergency department (ED) patients.

Methodology:

This retrospective, observational cohort study included adult patients discharged from the ED who received either pain-dose ketamine or opioid medication for pain management or minor procedures at Northeast Georgia Medical Center between January 1, 2024 and June 30, 2024. The primary outcome was total opioid consumption in the ED, measured in morphine milligram equivalents (MMEs), in patients receiving pain-dose ketamine compared with those receiving opioids alone. Secondary outcomes included average change in pain scores during ED stay and total daily MME of opioid prescriptions issued at discharge. To control for confounding factors, patients were matched into 50 pairs based on similar demographic and clinical characteristics (age, gender, and indication for therapy), with one patient in each pair receiving only opioids (opioid-only group) and the other receiving ketamine plus/minus opioids (ketamine group). Data on demographics, medical history, dosing, adjunctive pain medications, and pain scores were collected, and statistical analyses were performed using descriptive and inferential methods, with statistical significance set at $p<0.05$.

Results:

A total of 133 patients met the inclusion criteria. One hundred patients were matched with 50 patients in the ketamine group and 50 in the opioid-only group. Baseline characteristics were similar between the two groups. For indication, 64% of the ketamine group received treatment for acute pain compared to 88% in the opioid-only group, while 36% of the ketamine group received treatment for procedural pain versus 12% in the opioid-only group. The ketamine group had a statistically significant higher total opioid consumption during the ED stay compared to the opioid-only group (median MME 17.5 [IQR 12-30] vs. median MME 12 [IQR 5-15]; $p = 0.002$). Change in pain score was greater in the ketamine group compared to the opioid group (median 0 [IQR 0–5] vs. median 0 [IQR 0–3.25]; $p = 0.173$). Additionally, the ketamine group demonstrated a statistically significant increase in daily MME requirements for outpatient opioid prescriptions (median MME 30 [IQR 25–39.5] vs. median MME 30 [IQR 20–38]; $p = 0.041$).

Conclusion:

This study found that ED patients receiving ketamine (plus/minus opioids) had higher total opioid requirements during their ED stay and required increased daily opioid doses at discharge compared to those receiving opioids alone. Pain score reductions were similar between the groups. The observed increase in MME requirements in the ketamine group may be attributable to its more frequent use for procedural sedation, as opposed to solely treating acute pain. Additional research is needed to better identify specific indications and optimal use of pain-dose ketamine in the emergency department.

global: Y

11:40am – 11:55am | **Impact of Pharmacist Driven Ceftriaxone De-Escalation on Clinical Outcomes in Patients Hospitalized for Community-Acquired Pneumonia** Athena A

Moderators: Ben Albrecht
Presenters: Dana Olheiser
Evaluators: Marcus Mize

Title: **Impact of Pharmacist Driven Ceftriaxone De-Escalation on Clinical Outcomes in Patients Hospitalized for Community-Acquired Pneumonia**

Authors: Dana Olheiser, Avery Shawen, Ashley Byrd, Cameron Selent

Objective:

Self Assessment Question: Will implementation of pharmacist driven ceftriaxone de-escalation improve duration of treatment and hospital associated costs?

Background: The American Thoracic Society (ATS) / Infectious Diseases Society of America (IDSA) 2019 Community Acquired Pneumonia (CAP) Guidelines recommend a standard empiric intravenous (IV) regimen of a β-lactam plus a macrolide or an appropriate fluoroquinolone for the treatment of severe CAP. Specificities regarding the broadening or narrowing of antimicrobial therapies varies according to clinical severity, likelihood of pathogens and/or resistant organisms, and facility protocol. At Trident Medical Center, providers order empiric IV azithromycin and IV ceftriaxone for hospitalized CAP patients through predefined order sets. After 48-hours, if the patient is clinically stable and able to take oral therapy, IV azithromycin is de-escalated to oral therapy per pharmacist driven protocol. This study evaluates the impact of an adjunct pharmacist driven ceftriaxone de-escalation protocol.

Methods:
This retrospective, single-center study evaluated the impact of the newly implemented pharmacist-driven IV ceftriaxone de-escalation protocol in patients hospitalized for CAP. Patients were included if they were being treated for CAP with IV ceftriaxone and had already received 2 doses, were clinically improving, tolerating other oral medications, and had no other indications for treatment other than CAP. Patients will be de-escalated to amoxicillin/clavulanate if they have no known or reported history of penicillin allergy or to cefuroxime if they have a documented or reported mild to moderate allergic reaction to penicillin (excludes anaphylaxis and SJS/TENS). This study analyzed primary endpoint of ceftriaxone de-escalation treatment success defined as improvement in white blood cell count (WBC), absence of fevers, and return to baseline oxygen requirements 24 hours after de-escalation. Additional secondary outcomes include time to de-escalation, duration of antimicrobial therapy and hospital length of stay. Safety outcomes include adverse drug reactions and 14-day readmission for CAP.

Results: In progress

Conclusion: In progress

global: Y

11:40am – 11:55am L **ASSESSMENT OF PHENOBARBITAL UTILIZATION FOR ALCOHOL WITHDRAWAL IN AN ACADEMIC MEDICAL CENTER** Parthenon 1

Moderators: Grace An

Presenters: Fatima Khoulani

Evaluators: Helen Bryant

Title: Assessment Of Phenobarbital Utilization for Alcohol Withdrawal in an Academic Medical Center

Authors: Fatima Khoulani, Emily Goodwin, Tabitha Brown, Brittany White, Jessica Briscoe

Background/Purpose: The American Society of Addiction Medicine guidelines currently recommends benzodiazepines (BZDs) as a first-line treatment for alcohol withdrawal syndrome (AWS), with phenobarbital (PB) as an adjunct for BZD-resistant cases or when contraindications exist. Recent studies suggest phenobarbital may yield more favorable outcomes as an initial treatment. This study aims to compare the effectiveness of a PB-driven treatment protocol to the traditional BZD treatment guided by the CIWA-Ar scale versus scheduled PB treatment with additional as needed (PRN) BZD.

Methodology: This single-center, retrospective, observational study was conducted at Erlanger Baroness Hospital, reviewing patient records from October 2017 to October 2024. Eligible patients were adults who underwent medical treatment for AWS during hospitalization. Patients were excluded if they were pregnant; chronically using BZD or barbiturates; actively on antiepileptic drugs for seizure disorder; incarcerated; left against medical advice or were transferred to another facility; received scheduled PB and BZD together; had inadequate CIWA documentation; received only a single dose of PB before transitioning to a BZD regimen; had PB ordered but not administered; were intubated or sedated at the time of treatment initiation; or were discharged as deceased.

This primary objective was to evaluate the time to clinical stability which was defined as hospital length of stay or resolution of alcohol withdrawal symptoms whichever occurs first in patients who received PB as the primary treatment for AWS compared to alternative approaches: PB treatment and PRN BZD guided by CIWA scale versus scheduled BZD treatment with additional PRN BZD also guided by CIWA scale. Secondary outcomes include the receipt of adjunctive treatment, and the incidence of withdrawal seizures. Safety outcomes include the incidence of sedation due to AWS. Data analyses will be performed with the assistance of a statistician.

Results:

A total of 180 patients were included (PB: 60; PB + PRN BZD: 66; BZD: 54). The PB group had the highest proportion of males (86.7%) and baseline CIWA-Ar scores (20.9 ± 11.3). ICU admissions were more frequent in the PB (46.7%) and PB + PRN BZD (42.6%) groups than in BZD (13.6%). Time to clinical stability was shortest with PB monotherapy (2.38 ± 2.10 days) compared to BZD (3.17 ± 1.54) and PB + PRN BZD (3.81 ± 1.56). Adjunctive treatment use was lowest in the PB group (31.7%), and no seizures occurred with PB monotherapy, versus 4.5% and 5.6% in PB + PRN BZD and BZD, respectively. Sedation was least common in PB (6.6%) and only one case of hypotension was reported (PB + PRN BZD). CIWA-Ar scores declined most rapidly in the PB group, dropping from 20.9 to 1.5 at 48 hours.

Conclusion:

PB monotherapy was associated with faster clinical stabilization, fewer withdrawal seizures, and lower sedation rates compared to combination or BZD -based regimens. These findings suggest that PB may be a safe and effective standalone option for managing alcohol withdrawal syndrome in select patients.

global: Y

11:40am – 11:55am L **Evaluation of Empiric Antibiotics In Sepsis Versus Non-Sepsis UTI Patients** Olympia 2

Moderators: Sheema Hallaji
Presenters: Casey Henderson
Evaluators: Elizabeth Oglesby

Title: EVALUATION OF EMPIRIC ANTIBIOTICS IN SEPSIS VERSUS NON-SEPSIS UTI PATIENTS

Authors: Marquist Henderson, Megan Heath, Doug Carroll

Objective: Discuss the appropriate empiric antibiotic treatment for urinary tract infections and sepsis based on current guidelines and evidence-based literature.

Self Assessment Question: What is an appropriate empiric agent for a patient with sepsis and MRSA risk factors?

Background: UTIs are among the most common infections in the community and inpatient settings. As noted in the IDSA 2011 guidelines for treating uncomplicated cystitis and pyelonephritis, when selecting an antibiotic, it is essential to consider patient-specific factors, the severity of the infection, and the inpatient facility's local antibiogram. However, since the IDSA guidelines have not been updated since 2011, UpToDate has reviewed literature with updated topics and guidance called "Acute complicated urinary tract infection (including pyelonephritis) in adults and adolescents," which may be more applicable to clinicians in today's current environment.
If left untreated, UTIs can lead to sepsis. The Surviving Sepsis 2021 Campaign guidelines recommend that antimicrobials should be started within one hour when there is a high suspicion of sepsis or septic shock. However, the guidelines do not specify which antimicrobials should be used; instead, clinicians should utilize clinical judgment to decide on appropriate empiric antibiotics based on patient's risk factors and suspected source of infection. This project was completed to evaluate our management of patients with UTI that present with sepsis compared to those without sepsis.

Methods: A list of patients admitted to the DCH Regional Medical Center from January 1, 2024, to August 31, 2024, was generated from the electronic health record with positive urine cultures and either an ICD-10 code for a urinary tract infection (cystitis and pyelonephritis) or an ICD-10 code for sepsis. Patients were excluded if they were diagnosed with septic shock or had multiple sources of infection. Each patient was randomly stratified into the UTI cohort or UTI with sepsis cohort and reviewed until 75 patients were in each group. The primary outcome was determined by the appropriateness of empiric antibiotic therapy administered within the first 3 hours of admission. Appropriateness of therapy was determined by risk factors in stated in the UpToDate and Surviving Sepsis 2021 Campaign guidelines. The secondary outcomes collected were comparing the pathogens isolated from the culture results, incidences of MDROs, overbroad empiric therapy, and rates of bug-drug mismatch between each group.

Results: In the sepsis cohort, 40% were treated appropriately per the guideline recommendations, and in the non-sepsis cohort, 78% were treated appropriately. E. Coli was the most common pathogen isolated from both sepsis and non-sepsis groups, 59% and 41.3%, respectively. In the sepsis cohort, there were 8 MDRO pathogens isolated, while there were 9 MDRO pathogens isolated in the non-sepsis cohort. In the sepsis cohort, 27.3% patients were treated with overbroad therapy, and 18.7% had a bug-drug mismatch. In the non-sepsis cohort, 5.3% were treated with over-broad therapy, and 30.7% had a bug-drug mismatch.

Conclusion: There was a lower percentage of patients treated appropriately in the sepsis cohort due to risk factors that warranted exteneded coverage or receiving extended coverage without any risk factors. In addition, more patients were treated appropriately per guideline recommendations in the non-sepsis cohort versus the non-sepsis, there were higher rates of bug-drug mismatch in this cohort. There is an opportunity for educating providers on assessing risk factors for broader coverage when treating a UTI.

global: Y

11:40am – 11:55am L **Inhaled Corticosteroid Device Delivery and Pneumonia Outcomes in a Hospitalized COPD Patient Population** Parthenon 2

Moderators: Kristen Turner
Presenters: Leslie Phillips
Evaluators: Jonathan Alligood

Title:

Inhaled Corticosteroid Device Delivery and Pneumonia Outcomes in a Hospitalized COPD Patient Population

Authors:

Leslie Phillips

Luke Hentrich

Danielle Dennis

Hannah Suber

Kate Wolshon

R. Eric Heidel

Thaddeus McGiness

Objective:

To evaluate the impact of inhaled corticosteroid (ICS) delivery type (dry powder inhaler [DPI] versus pressurized metered-dose inhaler [pMDI]) on pneumonia incidence in hospitalized patients with COPD

Self Assessment Question:

global: Y

11:40am – 11:55am O **THE USE OF LEVOCARNITINE AND VITAMIN B IN ADULT PATIENTS WITH ACUTE LYMPHOBLASTIC LUKEMIA RECEIVING PEGASPARGASE** Olympia 1

Moderators: Marci Swanson, Nadia Hason

Presenters: Veronica Bekheit

Title: THE USE OF LEVOCARNITINE AND VITAMIN B IN ADULT PATIENTS WITH ACUTE LYMPHOBLASTIC LUKEMIA RECEIVING PEGASPARGASE

Authors: Veronica Bekheit, Caralyn Escobar, Hunter Burnstine, Stephen Tomasek

Background: Pegaspargase, a key component in the treatment of acute lymphoblastic leukemia (ALL), is associated with significant toxicities, including hepatoxicity, which can impact treatment tolerance and outcomes. Levocarnitine and vitamin B supplementation have been proposed as potential adjuncts to mitigate these adverse effects. This study aims to describe the utilization patterns of levocarnitine and vitamin B in adult patients with ALL receiving pegaspargase and assess trends in patient outcomes.

Methods: A retrospective, descriptive analysis was conducted on adult patients ≥18 years old diagnosed with ALL who received pegaspargase as part of their chemotherapy regimen. Patient demographics, liver function test results, pancreatic liver enzyme levels, and levocarnitine and vitamin B supplementation regimens were gathered through a retrospective chart review. Trends in laboratory values before and after supplementation were analyzed.

Results: The group receiving both levocarnitine and vitamin B experienced a higher number of mild hepatotoxicity cases (Grades 1–2); however, instances of severe toxicity (Grades 3–4) were still observed. The use of levocarnitine and vitamin B may help maintain liver enzymes (AST, ALT, ALP) and pancreatic markers (amylase, lipase) closer to baseline levels. This suggests a potential role in reducing the severity of treatment-related toxicities.

Conclusion: Levocarnitine and vitamin B supplementation may help maintain normal liver and pancreatic enzyme levels during pegaspargase therapy. This approach shows potential to reduce treatment-related toxicities and may serve as a low-risk supportive care strategy for similar patient populations at other institutions.

global: Y

11:40am – 11:55am 1 **Clinical Outcomes for Recipients of Kidney Transplantation from Hepatitis C Virus-Infected Donors** Athena J

Moderators: Justin Chen

Presenters: Caitlyn Tyus

Evaluators: Alyssa Huff

Title: Clinical Outcomes for Recipients of Kidney Transplantation from Hepatitis C Virus-Infected Donors

Authors: Caitlyn Tyus, Sally Sikes, Caroline Gatzke, Victoria Burnette

Objective: To assess allograft survival status at one year post-transplant for recipients of Hepatitis C Virus (HCV) NAT-positive donor kidneys in comparison to those who received kidneys from NAT-negative donors

Self Assessment Question: Does receiving a kidney from an HCV NAT-positive donor affect allograft survival status at one year post-transplant compared to HCV NAT-negative donor kidney recipients?

Background: According to the Organ Procurement and Transplantation Network, over 86% of individuals currently awaiting organ transplantation are specifically in need of a kidney. Despite this high demand, a significant number of potentially life-saving organs have been discarded due to donor Hepatitis C virus (HCV) infection. Since the introduction of direct-acting antivirals (DAAs) in 2014, these treatments have demonstrated to be both safe and effective for managing HCV in patients with chronic kidney disease (CKD) and kidney transplant recipients. Nonetheless, kidneys from HCV-positive donors still faced a 48% increased risk of discard in 2019.

Methods: This study was a single-center retrospective chart review conducted at Ascension Saint Thomas Hospital West (ASTHW) to compare clinical outcomes of deceased-donor kidney transplants from HCV-infected donors versus donors without HCV. The study included patients who received a deceased-donor kidney transplant at ASTHW between November 11, 2020 - October 18, 2023. Patients were included when the following criteria was met: kidney transplant recipient, age ≥18 years at time of transplant. Exclusion criteria included patients with a history of transplant, documentation of dual-organ transplant, pregnant individuals, and incarcerated patients. The primary outcome was the allograft survival status at one year post-transplant for recipients of NAT-positive donor kidneys in comparison to those who received kidneys from NAT-negative donors. Secondary outcomes included incidence of HCV following transplant, rate of HCV recurrence following DAA therapy, and the utilization of various HCV treatment regimens.

Results: In total, 350 patients were screened, with 91 meeting inclusion criteria, and 84 available for follow-up at one year post-transplant (42 in the HCV Donor Positive (POS) group and 42 in the HCV Donor Negative (NEG) group). There was no significant difference in allograft survival status at one year post-transplant between groups (p=0.457). Secondary outcomes conveyed that 64% of patients who received HCV NAT(+) kidneys actually contracted HCV following organ transplantation. The HCV treatment of choice was sofosbuvir-velpatasvir, with glecaprevir-pibrentasvir being utilized in two patients due to the drug interaction between sofosbuvir-velpatasvir and amiodarone. Clearance of HCV was achieved by 85% of patients following initial therapy, two patients (7.5%) reported HCV breakthrough following clearance, one patient (3.7%) experienced treatment failure, and one patient expired during HCV treatment (unrelated to HCV or treatment). The HCV treatment failure was determined to be caused by medication noncompliance. One of the HCV breakthroughs following clearance patients was due to medication noncompliance, while the other was due to the drug interaction and administration timing between sofosbuvir-velpatasvir and magnesium oxide. The secondary treatment following breakthrough or failure was sofosbuvir-velpatasvir-voxilaprevir.

Conclusion: In this study, there was no significant difference in allograft survival between HCV-positive and HCV-negative donor kidney transplant recipients. Interestingly, 36% of patients who received HCV NAT-positive donor kidneys did not contract HCV or require DAA therapy following transplantation; this result was correlated with donor kidneys with HCV NAT-positive but HCV antibody negative results. Limitations of this study included small sample size and inability to represent other HCV treatment regimens. Utilizing HCV-positive donor

global: Y

12:00pm – 12:15pm B **Evaluation of Outpatient Parenteral Antimicrobial Therapy and Antimicrobial Stewardship Program Practices at a Veterans Affairs Medical Center** Athena C

Moderators: Beth Phillips

Presenters: Alley Minton

Title: **Evaluation of Outpatient Parenteral Antimicrobial Therapy and Antimicrobial Stewardship Program Practices at a Veterans Affairs Medical Center**

Authors: Alley Minton, Bailey Guest, Cassidy Prewitt, Galina Wang

Objective: To evaluate the efficacy of OPAT.

Self Assessment Question: Which of the following is an example of a patient who would likely qualify for OPAT through SVAHCS?

Background: Outpatient parenteral antimicrobial therapy (OPAT) refers to the delivery of parenteral antimicrobial treatment in at least two doses on different days without requiring hospitalization. Many individuals are eligible for OPAT with the intent to effectively treat the ongoing infection with medical oversight, reduce or offset hospitalization, decrease healthcare costs and improve quality of life. Antimicrobial stewardship plays a crucial role in promoting the safe and appropriate use of antimicrobials to combat the rise of antibiotic resistance. Hospitals that have implemented antimicrobial stewardship programs (ASP) have reported significant reductions in unnecessary antibiotic prescriptions and improved patient outcomes. At the Salisbury Veterans Affairs Health Care System (SVAHCS), the OPAT program is overseen by a full-time Infectious Diseases physician assistant, with essential support from the Infectious Diseases (ID) clinical pharmacist practitioner (CPP), an ID/Acute Care CPP, and rotating ID physician oversight. This OPAT program is unique due to majority of requests for OPAT originate from surrounding non-VA healthcare facilities. In 2023, OPAT maintained a consistent enrollment of 149 patients, compared to 158 in 2022 and 122 in 2021, with various treatment regimens and durations.

Methods: This quality improvement project will be conducted as a retrospective cohort study. The main objective is to assess the efficacy of OPAT. Primary outcomes will focus on readmission rates to a hospital while receiving OPAT due to complications, adverse events, treatment failure or for reasons unrelated to infection or OPAT regimen. Secondary objectives include evaluating safety, antimicrobial stewardship interventions, the reduction of hospital bed days of care (BDOC) and intravenous (IV) line days avoided associated with OPAT. Secondary outcomes will include rate of OPAT completion, potential cost savings, 30-day readmissions post-OPAT (including reasons), and 30-day mortality following OPAT.

Results: 567 patient were extracted from data from January 2022 to December 2024. 398 patients were included, 122 patients did not meet inclusion criteria, and 47 were excluded by the exclusion criteria. 53 patients were readmitted during OPAT therapy, accounting for 13% of the total amount of patients included. The primary reason for readmission was due to concomitant disease which included 27 patients and 51% of the patients readmitted. Antibiotic failure was the second most common at 15 patients (28%), followed by adverse effects at 11 patients (21%). The readmission rate 30 days after OPAT completion only included 9 patients, 2% of the total patient population included. Comparable to the readmission rate, the primary reason for readmission was concomitant disease at 6 patients (66%) followed by 2 patients for antibiotic failure and 1 patient with C. difficile infection. The total OPAT completion rate was 97% with 386 patients. Mortality 30 days after OPAT was 1% with 5 patients. The average number of bed days of care avoided were 3,337 per year. The average number of IV-line days avoided were 134 per year. Over the 3-year span, there were 4,575 documented interventions. Aside from

a high number of evaluations and follow-up reviews, laboratory monitoring, nonformulary requests, drug information, duration change, and medication change were the top 5 ASP interventions.

Conclusion: OPAT at the SVAHCS is an efficacious alternative to prolonged hospitalization to complete antimicrobial treatment. OPAT data that was collected over the past 3 years has shown improvement since OPAT was last evaluated in 2017 at SVAHCS. Readmission rates are comparable to current literature with approximately half being unrelated to infection. Almost all patients who initiated OPAT with the SVAHCS completed therapy successfully with minimal complications and low overall 30-day mortality. SVAHCS ASP is integrally involved in OPAT routinely recommending and now documenting interventions and potential cost savings through TheraDoc.

Contact Information: alley.minton@va.gov

global: Y

12:00pm – 12:15pm B **Implementation and Impact Assessment of a Pharmacy Led Geriatrics Clinic** Athena D

Moderators: Stephanie Hopkins
Presenters: Emily Corbett
Evaluators: McKenzie Hodges

Title: Implementation and Impact Assessment of a Pharmacy Led Geriatrics Clinic

Authors: Emily Corbett, Krishna Rana, Kelly Krieger

Background: A geriatrics pharmacy clinic will be implemented as an expansion of pharmacy services to address geriatric related concerns such as dementia related medication titrations, polypharmacy, and deprescribing potentially inappropriate medications as identified by the American Geriatrics Society (AGS). The purpose of this project is to describe the interventions made and evaluate the impact of a pharmacist- led geriatrics clinic on reducing the drug burden index and increasing access to care among Veterans ≥ 65 years old with dementia related treatment and/or polypharmacy within a Veterans Affairs (VA) Health Care System.

Methods: A pharmacist-led geriatrics telephone clinic will be implemented to assist with the medication management of dementia related medications, reduce polypharmacy, and increase access to care among Veterans enrolled in the geriatrics psychiatric clinic. Patients will be referred to the clinic by geriatric psychologists for the titration and/or monitoring of acetylcholinesterase inhibitors, N-methyl-D-aspartate receptor inhibitor, selective serotonin reuptake inhibitors, and anti-amyloid therapy. Patients will also referred by the Acute Care for the Elders inpatient pharmacist for outpatient follow up after deprescribing is initiated at hospital discharge. Additionally, patients will be referred internally for polypharmacy assessment, prior authorization drug request consults and cost saving drug conversions.

A retrospective chart review will be conducted to include all patients referred to the pharmacy geriatrics clinic with at least one visit within a 6-month period. The primary objective is to describe the pharmacist interventions associated with implementation of the service expansion clinic. The secondary objective is to evaluate the change in a patients drug burden index score from the initial to last pharmacist visit for patients referred for polypharmacy. Lastly, the number of interim pharmacist-led visits will be used to estimate the geriatric psychologist time saved. Descriptive statistics will be utilized to describe the primary objective. Student t-test will be utilized for parametric data, while chi-square will be utilized for non-parametric data.

Results: There were a total of 31 patients enrolled in the pharmacist-led geriatrics clinic from August 12, 2024 to March 2, 2025. A total of 107 interventions were made among 80 unique visits. Patients that were referred for polypharmacy had an average of 1.85 visits per patient. Those referred from Geri-psych required an average of 2.43 visits per patient. A total of 57 medications were deprescribed. The most commonly prescribed medications were proton pump inhibitors and benzodiazepines. The average index DBI score was 2.28 and average post DBI 2.00 (-0.28, P = 0.02). The average time to first pharmacist visit from time of Geri-psych referral was 2.9 weeks with an average of 1.58 pharmacist visits between Geri-psych follow ups.

Conclusion: The majority of referrals came from Geri-psych providers for assistance with monitoring and titrating dementia related medications. Patients referred from Geri-psych often required more visits than those referred for polypharmacy likely due to the complexity and frequently changing needs of both patients and caregivers. This project showed that pharmacists can effectively assist with deprescribing to decrease a patients drug burden index.

global: Y

12:00pm – 12:15pm Y **Compounded Medications: Understanding Who Drives the Conversation in Clinical Practice**
Moderators: Courtney Isom Athena B
Presenters: Katherine Moutis, Katherine Moutis
Evaluators: Jaime Shockley
Title: Compounded Medications: Understanding Who Drives the Conversation in Clinical Practice

Author: Katherine Moutis

Practice Site: Innovation Compounding

BACKGROUND: According to Alliance for Pharmacy Compounding, approximately 1-3% of all prescriptions written in the United States are compounded medications. Compounded medications are individualized preparations for patients not achieving therapeutic goals with commercially available FDA-approved medications. The process for obtaining a prescription for a compounded preparation starts in the provider's office. If a compounded medication is deemed appropriate, the healthcare provider will write a prescription specifying the active ingredients, dose, route of administration, dosage form, and dosing interval. A licensed pharmacist then prepares the medication to these specifications. Through the use of shared decision making, the provider or the patient may initiate the conversation for considering the use of a compounded medication. There is currently no data published on who initiates this conversation. The purpose of this study was to identify if patients or providers are more likely to initiate the conversation for considering the use of a compounded medication and determine if there is a difference in perceptions of who initiates this conversation.

METHODS: Surveys were emailed to providers who had prescribed compounded medications and patients who had obtained compounded medications through one of the 16 pharmacies within the Revelation Pharma network since August of 2023. The surveys were emailed to 7,907 providers and 55,000 patients via email on October 1, 2024. The survey closed on December 1, 2024. A total of 857 (792 patients and 65 providers) responses were collected. The survey questions concerning who initiates the conversation about compounded medications were open ended. To analyze the data, all responses were examined and categorized as patient, provider, or both. Responses that did not fit into any of these categories were excluded. Responses to the survey were compared and tested using a chi-square test. P values < 0.05 were considered statistically significant.

Results: For both the patient and provider surveys, 75% of responses indicated that the provider initiates the conversation about compounded medications ($P = 0.951$). One percent of providers and 18% of patients reported that the patient initiated the conversation about compounded medications ($P = 0.003$). Twenty-four percent of providers and 7% of patients reported that both the patient and the provider initiated the conversation about compounded medications ($P < 0.001$).

Conclusions: The majority of both patients and providers reported that the providers are most commonly introducing compounded medications as a therapeutic option. This may be important when identifying audiences for education about the appropriate use of compounded medications and the availability of new compounded medications.

global: Y

12:00pm – 12:15pm R **EFFICACY OF BALANCED SOLUTIONS VERSUS NORMAL SALINE ON DIABETIC KETOACIDOSIS RESOLUTION** Athena J

Moderators: Justin Chen
Presenters: Benny Zhang
Evaluators: Alyssa Huff

Title: EFFICACY OF BALANCED SOLUTIONS VERSUS NORMAL SALINE ON DIABETIC KETOACIDOSIS RESOLUTION

Authors: Benny Zhang, PharmD, Bibidh Subedi, PharmD, BCCCP, Otsanya Ochogbu, PharmD

Background: Diabetic keto-acidosis (DKA) is a serious life-threatening complication. The initial management involves fluid resuscitation with crystalloids to restore intravascular volume. Current guidelines recommend normal saline (NS), however emerging evidence suggest that balanced crystalloids, such as Lactated Ringer's (LR), may be a more appropriate choice of fluid in the acute management of DKA given the risk of hyperchloremic non-anion gap metabolic acidosis and acute kidney injury with NS. The purpose of this study is to compare the efficacy of LR versus NS in the management of DKA.

Methods: This is a multi-site, retrospective, observational study at a 3,260-bed community teaching hospital system comparing LR to NS in patients admitted with DKA. Patients will be identified via the electronic medical record and included if age 18 or greater, admitted between August 1st, 2022 to August, 31st, 2024 with a confirmed diagnosis of DKA (using ICD-9/10 codes or according to the ADA guideline criteria, defined as: blood glucose >200 mg/dL or prior history of diabetes, β-Hydroxybutyrate concentration ≥3 mmol/L, and pH <7.3 and/or bicarbonate <18 mEq/L), that received continuous infusions of either LR or NS. Patients were excluded if they were transferred from an outside hospital and had end-stage renal disease. The primary outcome was time to DKA resolution (defined as: (1) blood glucose <200 mg/dL and two of the following (2) bicarbonate ≥ 18 mEq/L, venous pH ≥ 7.3, and a calculated anion gap ≤ 12 mEq/L). Secondary outcomes include incidence of hyperchloremic non-anion gap metabolic acidosis, incidence of hypokalemia, time to discontinuation of maintenance fluid, acute kidney injury, ICU length of stay, and hospital length of stay.

Results: A total of 1738 patients were screened for inclusion: 274 patients in the LR group and 1464 patients in the NS group. 152 patients were included in the study, with 76 patients in each group. The baseline median anion gap (33 mmol/L vs 23 mmol/L; $p<0.001$) and β-Hydroxybutyrate (8.6 mmol/L vs 4.8 mmol/L; $p<0.001$) was higher in the LR group compared to the NS group, respectively. Additionally, the baseline median pH (7.13 vs 7.24; $p<0.001$) and bicarbonate (9 mmol/L vs 15 mmol/L; $p<0.001$) was lower in the LR group compared to the NS group, respectively. There was no difference in comorbidities between groups and the most common cause for DKA was non-compliance (49%). More patients in the LR group were classified as severe DKA when compared to the NS group; 59% vs 24%, $p<0.001$. The total amount of intravenous fluid received was greater in the NS group compared to the LR group: 5842 mL vs 4575 mL, $p=0.006$. Lactated Ringer's was associated with faster time to DKA resolution and time to anion gap closure when compared to NS; 20.5 hr vs 24.1 hr ($p=0.022$) and 16.4 hr vs 20.3 hr ($p=0.004$), respectively. There was no difference in the incidence of hyperchloremic non-anion gap metabolic acidosis, hypokalemia, time to discontinuation of maintenance fluid, acute kidney injury, and hospital length of stay. ICU length of stay was longer in the LR group (51 hours) compared to the NS group (38 hours), $p=0.015$.

Conclusion: The use of LR in patients with DKA was associated with a faster time to DKA resolution and anion gap closure compared with NS, with no difference in adverse events between both groups. The findings of this study suggest that balanced crystalloids may be a more appropriate choice of fluid therapy in the management of DKA, but larger prospective studies are warranted to validate the findings of this study.

12:00pm – 12:15pm R **Evaluating Treatment Compliance and Effectiveness for Opioid Use Disorder Through a Pharmacy Developed Emergency Department-Initiated Buprenorphine Protocol** Athena G

Moderators: James Holland
Presenters: Dana Thorvilson
Evaluators: Haley Smith

Title: Evaluating Treatment Compliance and Effectiveness for Opioid Use Disorder Through a Pharmacy Developed Emergency Department-Initiated Buprenorphine Protocol

Authors: Dana Thorvilson, Kevin Lynch, Charleen Melton, and Katie McLaurin

Background: Opioid-involved overdose deaths accounted for 81,806 deaths in the United States in 2022, the most in any previous year, with 64.7% of deaths having at least one potential opportunity for intervention. With an increased number of opioid prescriptions and the emergence of synthetic opioids in the illicit market, emergency department (ED) visits for opioid overdoses, opioid withdrawal, complications of injection drug use and other opioid-related adverse events have escalated with an estimated one in every eighty ED visits in the United States. Naltrexone, methadone, and buprenorphine are Food and Drug Administration-approved medications for the treatment of opioid use disorder (OUD) and have been available for several decades; however, untreated OUD remains a public health problem. As the opioid crisis has worsened, the ED has become the front line and a crucial touchpoint for engaging patients in treatment for OUD and may be the only contact individuals with OUD have with the healthcare system. This study aims to evaluate the impact of a pharmacy developed, ED initiated buprenorphine or buprenorphine/naloxone protocol.

Methods: An ED-based buprenorphine initiation protocol was approved for implementation at CaroMont Regional Medical Center (CRMC) on November 5th, 2024. This is a single-center, prospective cohort study that will be conducted from November 15

global: Y

12:00pm – 12:15pm R **Impact of Vasopressin Initiation Timing on Outcomes of Septic Shock Patients Receiving Norepinephrine at a Large Community Hospital** Athena H

Moderators: Dustin Bryan
Presenters: Trish Elder
Evaluators: Jenna Jewett

Title: Impact of Vasopressin Initiation Timing on Outcomes of Septic Shock Patients Receiving Norepinephrine at a Large Community Hospital

Authors: Trish Elder, Mickala Thompson

Background: The Surviving Sepsis Campaign Guidelines 2021 recommend use of norepinephrine (NE) as the first-line vasopressor for adult patients with septic shock. If the mean arterial pressure (MAP) cannot be maintained above 65 mmHg with a low to moderate dose of NE (0.25-0.5 mcg/kg/min), vasopressin is recommended second-line. Several research studies have been conducted in recent years to address the ambiguity surrounding the most appropriate timeframe for initiation of vasopressin. Some study findings include an increased time to shock resolution and decreased length of ICU stay with early initiation of vasopressin. The purpose of this study is to assess the effect of vasopressin initiation timing on outcomes of septic shock patients receiving NE at Huntsville Hospital.

Methods: A retrospective, institutional review committee exempt, chart review was conducted to evaluate all non-pregnant patients 18 years or older with active vasopressin and NE infusion orders and a diagnosis of septic shock, between August 1, 2023 and March 31, 2025. Patients were excluded if they received other vasopressors prior to vasopressin, they were located in the Cardiovascular ICU (CVICU), or their NE infusion rates could not be determined. Data was collected from the electronic health record (EHR) and analyzed using descriptive statistics. The primary endpoints were NE dose at time of vasopressin initiation and time from shock presentation to vasopressin initiation. The secondary endpoints included MAP 6 hours post vasopressin initiation, NE dose 6 hours after vasopressin initiation, time to shock resolution and ICU LOS.

Results: A total of 58 patients were included in the study: 52 in the “pre-intervention” (PRE) group and 6 in the “post-intervention” (POST) group. The baseline characteristics were similar between groups, apart from race. The number of patients initiated on vasopressin when the dose of NE was >0.5 mcg/kg/min was higher in the PRE group than the POST group with 69% and 17%, respectively. The median dose of NE at time of vasopressin initiation was 0.7 mcg/kg/min in the PRE group and 0.37 mcg/kg/min in the POST group. Due to the high mortality rate in this patient population, the secondary endpoints, time to shock resolution and ICU length of stay had 11 patients in the PRE group and 2 patients in the POST group. Due to the sample size, these outcomes could not be adequately assessed.

Conclusion: The implementation of a new order comment on all NE orders demonstrated a positive trend in the reduction of the NE dose when vasopressin was initiated. A larger sample size is needed to fully assess outcomes such as time to shock resolution and ICU length of stay in this patient population. Other limitations included the retrospective study design and limitations of EHR capabilities that led to a delay in intervention implementation.

global: Y

12:00pm – 12:15pm | **Oral β-lactam versus Fluoroquinolone or Trimethoprim-sulfamethoxazole for Directed Short Course Therapy in Uncomplicated Enterobacterales Bacteremia** Athena A

Moderators: Ben Albrecht
Presenters: Colby Jordan Osborne
Evaluators: Marcus Mize

Title: Oral β-lactam versus Fluoroquinolone or Trimethoprim-sulfamethoxazole for Directed Short Course Therapy in Uncomplicated Enterobacterales Bacteremia

Authors: Colby Jordan Osborne, Allison M. Field, Christopher Dennis, David Laurent

Background/Purpose: Gram-negative bacteremia is prevalent and a significant cause of morbidity and mortality in hospitalized patients. Evidence suggests that transitioning to oral (PO) antibiotics after initial intravenous (IV) therapy results in comparable outcomes, while reducing hospital length of stay. Due to their favorable oral bioavailability, fluoroquinolones (FQs) and trimethoprim/sulfamethoxazole (TMP-SMX), have historically been preferred when selecting a PO agent. However, rising resistance rates and potential adverse effects may limit their use. Recent data suggest that PO β-lactam antibiotics may be an effective alternative. However, data on short course therapy with PO β-lactams remains limited. This study aims to evaluate the efficacy and safety of utilizing short PO β-lactam courses as directed therapy in uncomplicated Enterobacterales bacteremia.

Methods: This retrospective, cohort study assesses hospitalized patients ≥18 years of age with uncomplicated Enterobacterales bacteremia between January 1, 2020, and May 31, 2024. Patients receiving a short course, defined as 6 to 9 consecutive active antibiotic days, with transition to a PO β-lactam, FQ, or TMP-SMX as directed therapy with <96 hours of active IV therapy were included for analysis. The primary endpoint is a 30-day composite of treatment failure, defined as all-cause mortality, hospital readmission, recurrent bacteremia, or primary site infection due to the same microorganism. Secondary endpoints include individual components of the primary outcome at 30 and 90 days, as well as 90-day incidence of Clostridioides difficile infection (CDI) and multidrug-resistant organism (MDRO) colonization.

Results: Of 2046 patients screened, 281 patients (n=179 FQ/TMP-SMX and n=102 β-lactam) were included in the study. Baseline characteristics were similar between groups. The main source of infection was the urinary tract, with 79.3% in FQ/TMP-SMX group and 82.4% in β-lactam group. The most common pathogen identified was Escherichia coli (76.5% for both groups). The primary outcome occurred in 15/179 patients (8.4%) in the FQ/TMP-SMX group verses 8/102 patients (7.8%) in the β-lactam group (P=0.875). There were no statistically significant differences in secondary outcomes between groups, including 90-day all-cause mortality, hospital readmission, or recurrent bacteremia. Confirmed CDI at 90 days occurred in 1/179 (0.56%) in FQ/TMP-SMX group with no cases observed in β-lactam group.

Conclusion: Short-course oral β-lactam therapy demonstrated similar effectiveness and safety outcomes compared to FQ or TMP-SMX regimens in patients with uncomplicated Enterobacterales bacteremia. These findings support that in patients with uncomplicated Enterobacterales bacteremia, a 7-day treatment course utilizing a PO β-lactam for definitive therapy may be appropriate.

global: Y

12:00pm – 12:15pm L **Comparison of Patient-Controlled Analgesia (PCA) and non-PCA Opioid Pain Management Modalities in Sickle Cell Disease (SCD) During Vaso-Occlusive Crises (VOC)** Parthenon 2

Moderators: Kristen Turner
Presenters: Natalie Ortiz-Gratacos, Natalie Ortiz-Gratacos
Evaluators: Jonathan Alligood

Title: Comparison of Patient-Controlled Analgesia (PCA) and non-PCA Opioid Pain Management Modalities in Sickle Cell Disease (SCD) During Vaso-Occlusive Crises (VOC)

Authors: Natalie Ortiz-Gratacos; Megan Durango; Nicholas Mastromarino; Irina Santamaria

Objective: To identify differences between treatment modalities for VOC in SCD. \

Self-Assessment: Based on this retrospective study, which modality had a lower morphine milliequivalent (MME) requirement?

Background: SCD causes acute pain episodes called VOC, often leading to hospitalization. The American Society of Hematology recommends intravenous (IV) opioids for VOC treatment, but the optimal administration method remains uncertain. Opioids can be given via PCA or intermittent bolus referred to as non-PCA. While some studies suggest PCAs reduce hospital stay and opioid use, others find non-PCA methods offer better pain control and shorter stays. The purpose of this study is to compare PCA versus non-PCA opioid modalities to identify the most efficient pain modality during VOC.

Methods: Patients included in this study were 18 years or older with a preexisting SCD diagnosis, two or more admissions to AdventHealth Central Florida Division and who were treated with both modalities (PCA vs non-PCA) in separate encounters. The reason for admission had to be for pain from VOC. The primary objective is to evaluate the change in pain intensity scores for each modality. The secondary objectives are mean pain scores, length of stay (LOS), 30-day readmission rates, leaving against medical advice (AMA) rates, daily average MMEs, and life-threatening opioid side effects (naloxone use).

Results: Sixteen patients participated in this study. A within-patient comparison was conducted between two encounters; one with PCA and one without PCA for each patient. Ten patients reported lower pain scores during the PCA encounter, while six patients reported lower pain scores during the non-PCA encounter. In terms of percentage differences in pain scores, eight patients experienced a greater reduction with PCA, five with non-PCA, and three had no difference. Although there were differences among the groups, none were found to be statistically significant. The average percent reduction between the initial and final pain scores was higher in the PCA group compared to the non-PCA group (49% vs 43%, respectively, p= 0.416). The mean pain score for the PCA encounters was not significantly lower than for non-PCA encounters (6.67±2.60 vs 6.82±2.51, p=0.717). Regarding LOS and daily average MMEs, the non-PCA group had lower values of 5.6 days and 169 MMEs compared to the PCA group of 7 days and 210 MMEs, (p= 0.23 and 0.599, respectively). However, 30-day readmission rates were lower in the PCA group (7 patients) than in the non-PCA group (9 patients); p=0.687. AMA rates were the same between the groups (p= 1). No naloxone was used in the non-PCA group, while one patient in the PCA group required naloxone (p=1).

Conclusion: The treatment of VOC in SCD patients using a PCA may be associated with greater pain reduction at discharge and readmission rates compared to non-PCA modalities. However, the PCA group also exhibited higher MME amounts and one incidence of naloxone use. From the within patient comparison, it was concluded

the majority of patients had better pain control with PCA use. Further studies are needed to support these findings.

global: Y

12:00pm – 12:15pm L **Outpatient evaluation of hemoglobin monitoring frequency in patients on anticoagulation therapy** Parthenon 1

Moderators: Grace An

Presenters: Liana Ha, Liana Ha

Evaluators: Helen Bryant

Primary Investigator: Liana Ha
Co-investigators: Saira Mirza; Alyssa Utz; Salman Hasham; Mikhail Y. Akbashev

Background:
Anticoagulation therapy is used for a variety of indications, such as treatment of thromboembolism, prevention of stroke in atrial fibrillation, in critically ill patients, and other patients with hypercoagulable states. Anticoagulation therapy is considered high-risk, and the main risk associated with use is bleeding. The International Society of Thrombosis and Hemostasis defines major bleeding as fatal bleeding, bleeding associated with a decrease in hemoglobin (Hgb) of >2 g/dL, or bleeding associated with a critical anatomical site. Routine complete blood count (CBC) screening has shown utility in detecting occult bleeds before becoming severe or major bleeding. There is no clear designation on how often anticoagulation patients should be seen in clinic or have their CBC monitored, and it is not clear if this affects their bleeding risk. It is also unclear how risk factors for bleeding, such as chronic conditions and medication use, affect how often a person needs to be monitored. Further investigation into Hgb monitoring intervals may help guide clinicians on more effective lab ordering and patient monitoring. The purpose of this study is to compare outpatient Hgb monitoring intervals of less than and more than a year in patients on anticoagulation.
Methods:
This IRB-exempt study was a single-center, retrospective chart review of adult patients receiving anticoagulation therapy from our institution's outpatient pharmacies between January 2017 – March 2023. The patient list was obtained from the electronic health record. Patients were included if they were at least 18 years of age, had at least two Hgb labs collected at least half a day apart, and had a decrease of hemoglobin of at least 2 g/dL. Patients were excluded if they were on anticoagulation therapy for less than a year or not on anticoagulation therapy at the time the Hgb was collected. The primary outcome was the incidence of patients with a decrease of > 2 g/dL in Hgb and monitored less frequently than annually. Secondary outcomes included the incidence of Hgb < 7g/dL, bleeding at a critical site, symptomatic bleeding, and requiring blood transfusions.
Results:
Of the 7254 hemoglobin labs screened, 196 Hgb values were included in the final analysis. Of the 196 Hgb values, 82% (n=160) were monitored more frequently than annually and 18% (n=36) were monitored greater than a year apart. Of the values that were collected less than a year apart, 41% (n=81) were collected less than 91 days apart, 22% (n=42) were collected between 91-180 days apart, 14% (n=27) were collected between 181-270 days apart, and 5% (n=10) were collected between 271-365 days apart.
When comparing Hgb results that were measured greater than a year apart to less than a year apart, patients that were monitored more frequently experienced a greater mean difference in hemoglobin values (-3.17 vs -2.78, p=0.066), were more likely to have blood transfusions (13% vs 8%, p=0.482), and were more likely to have a hemoglobin of less than 7 g/dL (9% vs 0%, p=0.056). Patients that were monitored less frequently experienced more symptomatic bleeding (36% vs 31%, p=0.522). No patients in either group experienced bleeding at a critical site.
Conclusion:
In conclusion, patients on anticoagulation therapy with a decrease in hemoglobin of at least 2 g/dL were more likely to have their outpatient hemoglobin monitored more frequently than annually. Hemoglobin monitoring frequency of less than annually was associated with a greater likelihood of occult anemia.

global: Y

12:00pm – 12:15pm N **Blood Pressure Trajectory Post-Initiation of Eptinezumab Infusions For Migraines** Athena I

Moderators: Vanessa Velazco
Presenters: Ashleigh Neese
Evaluators: Adam Sawyer

Title: Blood Pressure Trajectory Post-Initiation of Eptinezumab Infusions For Migraines

Authors: Ashleigh Neese, Rachel Renwick

Introduction: Calcitonin gene-related peptide (CGRP) is a vasodilatory neuropeptide involved in the pathway responsible for onset of migraines. There are several injectable monoclonal CGRP antagonists approved by the FDA for prevention and treatment of migraines. Post-marketing safety monitoring data for erenumab suggests that CGRP antagonists may place patients at risk for increased blood pressure. Eptinezumab was approved for prevention of migraine in 2020 for the prevention of both episodic as well as chronic migraine. However, it has not undergone evaluation for its effect on blood pressure trajectory post-infusion.

Methods: This retrospective, single-center, multi-site study was performed to determine blood pressure trajectory post-infusion for eptinezumab. Patients selected for inclusion were those who received at least 1 dose of eptinezumab at an infusion center within the VUMC Enterprise. The primary outcome of the study was to assess the incidence of significant blood pressure increases immediately following eptinezumab infusion which was defined as an increase greater than or equal to 20 mmHg or 10 mmHg for systolic or diastolic blood pressure, respectively. The incidence of long-term blood pressure increases at 6 months after eptinezumab infusion and a comparison of increases in blood pressure for the 100 mg versus the 300 mg dose of eptinezumab were investigated.

Results: There were 130 patients who received a total of 512 administrations of eptinezumab during the selected time period. Of these administrations, only 35 (7%), met the criteria for a significant increase in blood pressure immediately following infusion for the primary outcome. The average change in blood pressure was -7.48 mmHg for systolic blood pressure and -4.35 mmHg for diastolic blood pressure immediately following administration. When comparing eptinezumab 100 mg versus 300 mg, 20 (9.1%) and 13 (6.1%) of patients experienced a significant increase in blood pressure, respectively. At six months following infusion, 31 (23.8%) of all patients receiving eptinezumab met the criteria for a significant increase in blood pressure. For patients receiving eptinezumab 100 mg, 28 (25.0%) of patients met criteria for a significant increase in blood pressure at 6 months while 15 (26.3%) of patients receiving eptinezumab 300 mg met criteria.

Conclusions: Many patients were previously on other CGRP agents which may have confounded patients experiencing significant blood pressure increases. Additionally, patients had their blood pressure checked post-infusion which resulted in a more accurate blood pressure reading at rest versus when a patient initially presents for their infusion. There were a limited number of patients with eptinezumab as their original infusion which introduced confounding with the 100 mg patient group. Additionally, there was variability in where the patient's 6-month blood pressure was taken. Overall, it was found that eptinezumab causes low incidences of significant blood pressure increases immediately following infusion but can cause increases over a longer period. Therefore, more research should be performed to compare blood pressure increases in patients undergoing treatment with other CGRP agents to eptinezumab.

global: Y

12:00pm – 12:15pm O **Assessment of Biomarker Testing in Hormone Receptor-Positive and Human Epidermal Growth Factor 2 Receptor-Negative Breast Cancer Patients** Olympia 2

Moderators: Sheema Hallaji
Presenters: Sarah Seward
Evaluators: Elizabeth Oglesby

Title: Assessment of Biomarker Testing in Hormone Receptor-Positive and Human Epidermal Growth Factor 2 Receptor-Negative Breast Cancer Patients

Authors: Sarah Seward, Thomas Morris, Alexia Greene

Background: Biomarkers are molecules within the body used to guide treatment of diseases. Genetic biomarkers can help predict the response to cancer therapy. Studies have shown inadequate utilization of biomarker testing despite high prevalence of mutations and significant improvements in clinical outcomes with targeted therapy. Previous literature supports the use of biomarker testing based on improved patient outcomes and suggests the need for improvement in routine clinical testing. The aim of this study is to assess the utilization of biomarker testing in accordance with guideline recommendations for ESR1, AKT1, PIK3CA, and BRCA mutations in endocrine-resistant metastatic breast cancer patients.

Methods: This study was a retrospective, observational, cohort study utilizing electronic medical records. Data collection included FirstHealth Cancer Center patients between January 1st, 2023, and December 31st, 2023. Patients were included by the following criteria: 18 years of age or older, female, and with HR+, HER2- metastatic breast cancer. Exclusion criteria include

global: Y

12:00pm – 12:15pm P **Survey of Healthcare Professionals' Satisfaction and Perceived Impact on Quality of Care with Pharmacy Pain Management Services** Olympia 1

Moderators: Marci Swanson, Nadia Hason

Presenters: Alice Y Chang, Alice Y Chang

Survey of Healthcare Professionals' Satisfaction and Perceived Impact on Quality of Care with Pharmacy Pain Management Services

Alice Chang, Danny Basri, Jasmine Jones, Arielle Spurley

Background/Purpose:

Wellstar Kennestone Hospital (KH) initiated an inpatient pain management consult service to provide additional support for patients not managed by palliative care or anesthesia-led acute pain consult services. Previous studies have demonstrated that involvement of a pharmacy pain management service is associated with better pain control and functional improvement. There is limited research that describes healthcare professionals' (HCP) perceptions on the impact of pharmacy pain management services. We evaluated HCP satisfaction with pharmacy pain management services and characterized their perceived impact on the quality of patient care.

Methods:

The survey was based on existing literature and prior feedback from HCPs. To enhance clarity, the survey was pretested with a multidisciplinary focus group including members of the KH Pain Assessment and Management Committee and external colleagues. The survey tool was updated based on respondents' feedback. This study was conducted at Wellstar Kennestone Hospital from April 1, 2024, to July 31, 2024. A voluntary, anonymous survey using Microsoft Forms was distributed to prescribers (physicians and advanced practice providers), pharmacists, and nurses via email. Unit leaders also shared a link to the survey with their nursing staff during shift huddles. The study was approved by the Wellstar IRB, and informed consent was obtained from each respondent at the start of the survey to confirm their willingness to participate.

Results:

Of the 105 respondents, 86% agreed or strongly agreed the involvement of the pharmacy pain service improved patient care quality. Additional perceived benefits included professional confidence and efficiency: 82% felt increased professional confidence in their ability to provide quality care to their patients and 77% reported the pharmacy pain service allowed them to spend time on other patient care activities. Furthermore, 84% indicated improvement in the quality of communication between the treatment team and the patient and 86% noted the pharmacy pain service improves a patient's understanding of the pain management plan and goals. Respondents expressed strong endorsement of the pharmacy pain management services in the comments section. However, while many comments suggested expanding the availability and scope of the pain consult service, only 68.6% preferred the pain management pharmacist independently make dose adjustments to currently ordered pain medications.

Conclusion:

The availability of pharmacy pain services resulted in a high level of satisfaction and perceived benefits amongst prescribers, nurses, and pharmacists. Most respondents reported that communication and patient understanding of their treatment were improved when the pharmacy pain management service was asked to assist in a patient's care. Respondents supported expansion of pharmacy pain service availability. However, there

was less support for pharmacists to be granted the authority to make independent medication adjustments. Further research is needed to explore differences in perceptions regarding advanced pharmacy practice roles to better understand the factors influencing HCPs' views.

global: Y

12:20pm – 12:35pm

Evaluation of Hospital Admissions for Diabetic Ketoacidosis Following the Initiation of Empagliflozin in a Veteran Population Athena J

Moderators: Justin Chen
Presenters: Connor Landers
Evaluators: Alyssa Huff

Abstract Title:
Evaluation of Hospital Admissions for Diabetic Ketoacidosis Following the Initiation of Empagliflozin in a Veteran Population

Authors: Connor Landers, Rose Weldon

Background/Purpose:
Empagliflozin is a sodium-glucose co-transporter 2 inhibitor (SGLT2) that is commonly utilized in the treatment of type-2 diabetes, chronic kidney disease, and in the setting of heart failure to reduce hospitalizations and mortality. Diabetic Ketoacidosis (DKA) is a life-threatening emergency that can be a challenging diagnosis for many practitioners. The purpose of this project is to retrospectively evaluate the prevalence of hospitalizations at the Birmingham VA Healthcare System (BVAHCS) for DKA in veterans currently prescribed empagliflozin.

Methods:
This quality improvement project was a single center, retrospective observational chart review. Data obtained was collected from October 2023 to January 2025. Two separate groups of veterans were identified on initial data extraction. Group one consisted of veterans with an active empagliflozin prescription within 90 days prior to admission. Patients in this group were also included based on the day supply of their prescription plus an additional 30 days to account for potential mailing issues or non-adherence. Group two consisted of veterans not prescribed empagliflozin. From these two groups, all veterans were sorted by admission diagnosis, labs, or the need for an insulin drip during admission. Veterans were included within this study based on their diagnosis of DKA during admission, a calculated anion gap > 12, the presence of ketones on urinalysis, a detectable beta-hydroxybutyric acid, or the initiation of an insulin drip during admission. Veterans were excluded if they had type-1 diabetes or were followed by palliative/hospice care. The primary endpoint was the rate of DKA occurrence in patients prescribed empagliflozin compared to veterans not on the medication. The secondary endpoint was the average duration of hospitalization. Other observations included the average blood glucose level noted on admission, whether the patient received treatment, the percent of empagliflozin discontinuations at discharge, the appropriate reporting to the VA Adverse Drug Event Reporting System (VADERS), and mortality rates.

Results:
From the initial data extrapolation, a total of 7,560 admissions were identified for the prespecified groups. The VA Adverse Drug Event Report for all adverse drug events (ADE) attributed to empagliflozin during the specified period was extracted for comparison to help ensure reported incidences of DKA were not missed. A total of 151 ADE reports were identified of which 18 total incidences of DKA (11.9% of total ADE reports for empagliflozin) were extracted and further analyzed. Overall, 59 total patient charts were included into this project's final analysis of data. On average, patients on empagliflozin and admitted for DKA were found to be 67 years of age and the majority were male (84.6%). The overall incidence of DKA between groups was determined to be 2.38% (27 of 1,134 admissions) in patients on empagliflozin and 0.56% (36 of 6,426 admissions) in patients who were not prescribed the medication. Our secondary endpoint, the duration of hospitalization, was similar between both groups (7.6 days vs 7.9 days). Other observations included a lower average blood glucose on admission for patients on empagliflozin (339 mg/dL vs 551 mg/dL), 96% of patients on empagliflozin were treated, empagliflozin was discontinued in 89% of veterans at discharge, and only 11% of patients experienced mortality. One substantial finding of this project noted only 59% of DKA admissions for patients on empagliflozin were appropriately reported to VADERS.

Conclusion:
A higher prevalence of DKA admissions was observed in the sodium-glucose cotransporter-2 inhibitor (SGLT2)

group as compared to veterans not taking the medication. This project identified high rates of patients receiving treatment in some capacity; however, adverse drug event reporting was found to be substantially low. Based on the findings of this project further education to providers, pharmacists, and patients can help improve identification and reporting of DKA within the BVAHCS.

12:20pm – 12:35pm

UTILIZATION OF PATIENT ALIGNED CARE TEAM CLINICAL PHARMACIST PRACTITIONERS TO DECREASE ENDOCRINOLOGY COMMUNITY CARE CONSULTS Olympia 1

Moderators: Marci Swanson, Nadia Hason

Presenters: Kaile Allen

UTILIZATION OF PATIENT ALIGNED CARE TEAM CLINICAL PHARMACIST PRACTITIONERS TO DECREASE ENDOCRINOLOGY COMMUNITY CARE CONSULTS

Kaile Allen, Amanda Carlisle, Bridget Roop
Birmingham VA Health Care System- Birmingham, AL

The United States has a large percentage of individuals with at least one chronic disease state. It has been reported that about 37 million Americans are diagnosed with diabetes. Clinical Pharmacy Practitioners (CPPs) are some of the most accessible healthcare providers for managing chronic disease states, such as diabetes. The Birmingham VA Healthcare System (BVAHCS) utilizes multiple community-based outpatient clinics (CBOCs) with designated CPPs to serve its Veteran population. The purpose of this project is to increase utilization of CPPs before considering endocrinology referrals for patients with Type II diabetes.

The project will consist of a retrospective chart review to obtain data in regard to endocrinology referrals and the appropriateness of the referral. The retrospective data will be from FY 2023-2024 and collected on a specific data collection form. BVAHCS Veterans will be included if they are diagnosed with type 2 diabetes and referred to an endocrinologist. A post-intervention analysis will consist of reviewing patients referred to a CPP and endocrinology after the education on CPP consults is provided to the CBOC providers. The data will be reviewed by means of descriptive statistics to identify trends in A1c, renewed community care referrals once A1c goal is achieved, and the number of patients referred to CPPs pre-and post-interventional education and the number of endocrinology consults pre- and post-intervention.

178 patients were included in this project from FY23-FY24. The average A1c prior to endocrinology referral for FY23 and FY24 was 9.0% and 8.9%, respectively. The average A1c post-endocrinology referral was 7.8% for both FY23 and FY24. 42% of patients from FY23 after seeing endocrinology had an A1c of <7% and 84% of those patients continued to see endocrinology regardless of achieving a target A1c goal. 40% of patients from FY24 after seeing endocrinology had an A1c of <7% and 94% of those patients continued to see endocrinology regardless of obtaining a target A1c goal. 58% of patients from FY23 and 60% of patients from FY24 had an A1c of >7%. 83% and 90% of those patients from FY23 and FY24, respectively, continued to see the endocrinologist and continued to have an uncontrolled A1c. FY24 data in regard to CPP consults revealed 17 consults within a 6 month period averaging about 3 consults per month. Post-intervention, the data revealed 21 new CPP consults in a 3 month period, averaging about 8 consults per month. Post-Intervention CPP Consults increased by about 40% or around 5 consults per month. Due to the time limitations of this study, a change in the number of endocrinology consults was not observed.

We observed an increase in CPP utilization after provider education was provided by our academic detailing pharmacist on the utilization of CPPs prior to placing community care endocrinology referrals. We also observed that many patients continue to see these specialized providers regardless of obtaining an A1c at goal. This was an important discovery and the renewal process for endocrinology consults is an area that revealed promise for process improvement. Future directions could include investigating the criteria for community care renewals, especially for chronic disease states that can be managed by VA CPPs and the monetary impact of CC at the

BVAHCS.

Resident email: kaile.allen@va.gov

12:20pm – 12:35pm B **Reducing the Risk of Hypoglycemic Events through Targeted Interventions Focused on Veterans at High Risk** Athena D

Moderators: Stephanie Hopkins
Presenters: Jessica Richardson
Evaluators: McKenzie Hodges

Title: Reducing the Risk of Hypoglycemic Events through Targeted Interventions Focused on Veterans at High Risk

Authors: Jessica Richardson, Blair Andreassi, Tiffany Jagel, Katrina White

Objective: Identify Veterans at high risk for hypoglycemia and evaluate the diabetes medications prescribed, focusing on medications with high hypoglycemic risk.

Background: Hypoglycemia is a significant risk for older adults with diabetes, particularly those receiving insulin or sulfonylureas. Current guidelines from the American Diabetes Association (ADA), American Geriatrics Society (AGS), and Endocrine Society emphasize individualized glycemic targets, recommending an A1C goal of 7-8% (or higher in frail individuals) rather than intensive glucose control. Studies, including the ACCORD, ADVANCE, and VADT trials, have demonstrated that stringent glycemic control in older adults does not significantly reduce macrovascular complications but increases the risk of hypoglycemia-related harm, such as falls. The 2014 Choosing Wisely Hypoglycemic Safety Initiative (CW-HSI), which was used to identify high risk Veterans, was created to reduce the risk of hypoglycemia and to ensure Veterans have a personalized plan for blood sugar control based on their unique health goals.

Methods:This was a multi-center, prospective quality improvement project conducted within the Gulf Coast Veterans Health Care System. The CW-HSI dashboard was used to identify Veterans 65 years and older within the Gulf Coast Veterans Health Care System with a diagnosis of type 2 diabetes, a glycated hemoglobin of <6%, and prescribed a sulfonylurea and/or insulin. Veterans with type 1 diabetes and/or those who had not been seen by Veterans Affairs primary care within the past 3 years were excluded. After identification of Veteran from the dashboard, the Veteran was contacted by the pharmacist to discuss findings. During the appointment, the pharmacist focus was placed on diabetes management including medication adherence, blood glucose readings, recent hypoglycemic events, and education on the treatment of hypoglycemic events. After collection of information from the Veteran, medication modifications such as discontinuation or dose reduction was implemented. After initial appointment with pharmacist, if Veteran was deemed as needing further interventions Veteran was followed up by clinical pharmacist practitioner. Otherwise, Veteran was followed up by their provider care clinician. Documentation of medication interventions, such as dosing modification, discontinuation, and prescribing of medications for treatment of hypoglycemic events were tracked via excel sheet to evaluate the impact of this project. The primary endpoint of the project was the frequency of medication interventions. Secondary endpoint was the number of hypoglycemic prevention medications prescribed. All data was analyzed using descriptive statistics.

Results: A total of 112 patients meeting the inclusion criteria were identified from the CW-HSI dashboard. Of these, 41 patients were excluded due to ongoing medication modifications and elevated A1C levels, 14 patients were deceased prior to contact, and 2 patients could not be reached after multiple attempts, resulting in 55 patients being contacted. Among those contacted, 95% (52 patients) agreed to implement medication modifications. The primary interventions were the discontinuation of sulfonylureas in 22 patients (42%) and a reduction in the insulin regimen in 20 patients (38%). Additional modifications included a dose reduction of sulfonylureas in 9 patients (17%) and complete discontinuation of insulin in 1 patient (5%). Furthermore, 16

patients were prescribed a hypoglycemic treatment agent.

Conclusion: Pharmacist-led deprescribing was effective in reducing the number of Veterans on diabetes medications that are high risk hypoglycemic events, thus reducing risk hypoglycemic events.

global: Y

12:20pm – 12:35pm Y **Evaluation of the Impact of Medical Billing on Documentation and Patient Outcomes in an Independent Community Pharmacy Chain** Athena B

Moderators: Courtney Isom
Presenters: Julissa Gonzalez
Evaluators: Jaime Shockley

Title: Evaluation of the Impact of Medical Billing on Documentation and Patient Outcomes in an Independent Community Pharmacy Chain

Authors: Julissa Gonzalez, Hashan Bhim, Greg Peden, Courtney E. Gamston

Background
Community pharmacies play a crucial role in healthcare by offering educational and clinical services in addition to the dispensing of medications. The sustainability of community pharmacies is being jeopardized with 12.8% of community pharmacies closing nationwide from 2009 to 2015. As reimbursement for dispensing medications continues to decline, pharmacies must find additional sources of revenue. As the scope of pharmacists also continues to evolve, opportunities to provide patients with more comprehensive care through clinical pharmacy services in the community setting emerge. Provision of services necessitates consistent and comprehensive documentation which is currently lacking in the community setting. The purpose of this project is to assess the impact of the introduction of medical billing on documentation of care, performed interventions, patient care outcomes and estimated cost of savings within an independent pharmacy chain.

Methods
This was a retrospective review analyzing service records from an independent pharmacy chain in North Alabama comparing documentation of patient care activities during the six months before and after the implementation of medical billing (January 2024 through January 2025). Interventions were classified using the Pharmaceutical Care Network Europe Foundation (PCNE) classification of drug-related problems (DRP). Encounters with patients that were cancelled or never completed were excluded. T-test analyses were used to compare the number of interventions documented pre and post introduction of medical billing.

Results
In Progress.

Conclusions
In Progress.

global: Y

12:20pm – 12:35pm R **Association between medication-related needle sticks and delirium in the ICU** Athena H

Moderators: Dustin Bryan

Presenters: Shelby Wathen

Evaluators: Jenna Jewett

Association between medication-related needle sticks and delirium in the ICU

Shelby Wathen, Susan Smith, Abigail Powell, John Carr
St. Joseph's/Candler Hospital
wathensh@sjchs.org

Background

Delirium is a clinical syndrome that is frequently observed in critically ill adults in the intensive care unit (ICU.) Several risk factors have been identified that contribute to delirium. These risk factors include, but are not limited to; pain, older age, infection, catheters, fever, hypoxia, brain injury, sleep deprivation, and sedatives. One risk factor that has not been well established is the number of subcutaneous injections or point-of-care glucose (POCG) tests a patient receives. The purpose of this study is to determine if there is an association between medication-related needle sticks and delirium in the ICU.

Methods

This was a retrospective, observational analysis that included critically ill adult patients (18 years old) who were admitted to the ICU for 72 hours or more from January 1, 2020 to December 31, 2020. Patients were divided into groups based on those who experienced delirium and those who did not. Patients were excluded if their Richmond Agitation Sedation Scale (RASS) was -4 to -5, if they were admitted with an acute neurological diagnosis, cognitive impairment prior to admission, admission for alcohol withdrawal, or history of dementia. Baseline demographic data, number of subcutaneous injections, number of blood glucose checks, RASS score, Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) score, length of hospital stay (LOS), length of ICU stay, and mortality were collected for each patient. The primary outcome was number of medication-related needle sticks per day in the ICU. Secondary outcomes were to determine the number of delirium-free days, all-cause mortality during the index hospitalization, LOS, and ICU LOS.

Results

A total of 404 patients were included in this study, 92 patients in the delirium group and 312 patients in the non-delirium group. The average number of subcutaneous injections and POCG tests per ICU day was 4.28 and 3.55 ($p = <0.001$) for the delirium and non-delirium groups, respectively. The average number of delirium-free ICU days was 8.5 in the delirium group and 5 in the non-delirium group ($p = <0.001$). The all-cause mortality rate was 40% in the delirium group and 19% in the non-delirium group ($p = <0.001$). Average LOS was 16 days and 9 days ($p = <0.001$) in the delirium and non-delirium groups, respectively and average ICU LOS was 10 days and 5 days in the delirium and non-delirium groups, respectively ($p = <0.001$).

Conclusions

There was a statistically significant difference between medication-related needle sticks per day in the delirium group vs the non-delirium group. All-cause mortality rate, number of delirium-free days, average LOS, and average ICU LOS also had a statistically significant difference. More data in a larger, prospective trial is needed to determine if there is a true correlation between needle sticks and delirium.

global: Y

12:20pm – 12:35pm R **Evaluation of Clinical Pharmacy Involvement in Emergency Department Culture Follow-up Services** Athena G

Moderators: James Holland
Presenters: Leah Clark
Evaluators: Haley Smith

Title: Evaluation of Clinical Pharmacy Involvement in Emergency Department Culture Follow-up Services

Authors: Leah J. Clark, Nicholas (Cade) Pritchett, Jason E. Dover, and Elizabeth W. Covington
Objective: At the conclusion of my presentation, the participant will be able to describe potential benefits of clinical pharmacist integration into culture follow-up services.
Self-Assessment Question:
Which of the following best describes the impact of clinical pharmacist integration based on the results of this study?
A. Reduced 30-day re-hospitalization/ED re-visit
B. Reduced patient pick-up of follow-up prescription
C. Reduced fluoroquinolone prescribing for urine cultures
D. Reduced time to patient contact

Answer: D
Background: Recently, emergency departments (ED) have invested in programs such as microbiologic culture follow-up to ensure test results received post-discharge are followed up appropriately and in a timely manner. To preserve quality of care and improve workflow, pharmacists have been integrated into these services. Current literature mainly includes pre-post studies assessing culture follow-up services before and after pharmacist involvement. The purpose of this study is to directly evaluate ED culture follow-up services between a main emergency department with pharmacy oversight compared to two externally located emergency departments without pharmacy oversight.
Methods: This single-center retrospective, observational study evaluated patients who had microbiology data resulting after discharge from the ED between August 2023- February 2024 at three EDs affiliated with East Alabama Health. Patients were excluded if they needed additional care, such as transfer or admission, or expired during their ED visit. A control group consisting of the external EDs (150 patients), where advanced practice providers independently manage culture follow-up, was compared to the main ED (150 patients), where clinical pharmacists are involved. The primary outcome was time from culture result to first attempted patient contact. Secondary outcomes included callback intervention errors, time to initial culture review, and readmission rates. Categorical data were analyzed via chi-square or Fisher's exact test. Continuous data were analyzed via student's *t*-test or Mann-Whitney U test based upon distribution. Statistical significance was defined by a 2-tailed p-value < 0.05.
Results: Baseline characteristics were balanced between the groups with except for age and reason for ED visit. The median time from culture result to first attempted patient contact was 5.2 hours [1.7-27.3] in the main ED compared to 25.0 hours [5.8-57.6] for the external EDs ($P < 0.001$). The main ED also demonstrated fewer callback intervention errors, 8.7% versus 22.7% ($P = 0.001$), and shorter time to initial culture review, 3.1 hours [1.1-5.3] versus 8.8 hours [3.8-23.9] ($P < 0.001$). There was no difference in readmission or ED revisits.
Conclusion: There was a significant difference in time from culture result to first attempted patient contact with the integration of pharmacy services. Further research is needed to evaluate the impact pharmacy integration has on clinically relevant outcomes such as readmission.

global: Y

12:20pm – 12:35pm G **Annual Wellness Visit Completion Rate on Home Visits Pre- and Post-Reminder Interventions** Athena C

Moderators: Beth Phillips

Presenters: Abby McCurry

Authors: Abby McCurry, Emma Williams, Tasha Woodall

Background: Patients who have had Medicare Part B for over 12 months are eligible for a yearly “Wellness” visit to create or update a personalized prevention plan. These annual wellness visits (AWVs) are generally covered by the Medicare plan at no cost to the patient, making it an easier and more affordable process for eligible patients to access critical preventive screenings and address medication and health-related problems. The reimbursement for these visits ranges from $120-160, making this beneficial as well for the providers to complete. Despite this, completion rates of AWVs tend to be suboptimal, particularly for homebound patients. The objective of this quality improvement study was to determine if pharmacists can increase the AWV completion rate for eligible patients by creating chart reminders for providers.

Methods: Patients met criteria to be included in this quality improvement study by being a home-based primary care (HBPC) patient at Mountain Area Health Education Center (MAHEC), being eligible and due for a Medicare Annual Wellness Visit, and having an appointment for a HBPC visit scheduled in the selected time frame. HBPC patients who had upcoming visits had their charts reviewed the weekend before their visit to determine if they met eligibility criteria. If criteria were met, a note was added in the "reason for visit" portion of the note and a message was sent to the providers performing the visit to alert the providers that the patient was due for an AWV. At the end of each week, a retrospective chart review was performed to determine if AWVs were completed and track overall completion rate.

Results: There were a total of 4 AWV due in the 17-day time frame with 2 (50%) being completed. This was an increase from the control time frame where 20% (1 of 5) AWV were completed.

Conclusion: Putting notes in the "reason for visit" section in addition to messaging involved providers were successful ways to increase the number of AWV completed for home-based primary care patients at MAHEC.

global: Y

12:20pm – 12:35pm | **Assessing Average Time-to-Positivity for Monomicrobial Bloodstream Infections within an Institutional Health System** Athena A

Moderators: Ben Albrecht
Presenters: Bailey Nero
Evaluators: Marcus Mize

Assessing Average Time-to-Positivity for Monomicrobial Bloodstream Infections within an Institutional Health System

Bailey M. Nero[1], Chengwen Teng[2], Erin Blalock[2], Joseph Kohn[1], R. Jake Crocker[4], Majdi N. Al-Hasan[1,3], P. Brandon Bookstaver[1,2]

[1]Prisma Health Richland Hospital, Columbia, SC; [2]University of South Carolina College of Pharmacy, Columbia, SC; [3]University of South Carolina School of Medicine, Columbia, SC, [4]Prisma Health Greenville Memorial Hospital, Greenville, SC

Background: Bloodstream infections (BSIs) are associated with significant morbidity and mortality especially in patients with co-morbidities that can amplify the severity of the illness. Broad spectrum empiric antibiotics are initiated with suspected sepsis. Antimicrobial stewardship strives to optimize usage of antibiotics when indicated and create interventions to better antibiotic usage. However, there is lack of stewardship

global: Y

12:20pm – 12:35pm L **Rivaroxaban vs enoxaparin in post-operative bariatric patients for thromboprophylaxis** Parthenon 2

Moderators: Kristen Turner
Presenters: Tulsiben Patel
Evaluators: Jonathan Alligood
Title: **Rivaroxaban vs enoxaparin in post-operative bariatric patients for thromboprophylaxis**

Authors: *Tulsiben Patel; Jessica Sterchi; Erika McDonald; Elizabeth Egawa; Stephanie Grimes; Crystal Laudermilk; Kellie Gaby; James Ray*

Objective: The purpose of this study is to compare the safety and efficacy of rivaroxaban to weight-based enoxaparin for thromboprophylaxis in post-operative bariatric patients at Blount Memorial Hospital (BMH).

Background:
Venous thromboembolism (VTE) is linked to considerable morbidity and mortality following bariatric surgery, with over 70% of cases occurring within the first 30 days post-discharge.1 Patients undergoing bariatric surgery are regarded as being at least at moderate risk for VTE due to severe obesity, associated comorbidities, laparoscopic surgery, and reduced mobility during the perioperative period.2 Currently, low molecular weight heparin i.e. enoxaparin is the preferred pharmacologic agent for VTE prevention in non-orthopedic surgical patients. Oral agents such as warfarin, aspirin, dabigatran and factor Xa inhibitors (apixaban, rivaroxaban) have not been largely studied in non-orthopedic surgical patients. Kroll et al. compared the effectiveness of rivaroxaban 10 mg daily for 7 vs 28 days in postoperative thromboprophylaxis after bariatric surgery.3 More adverse bleeding events were seen in the 28-day group with no difference in thrombotic events between groups within the first month in this study.
Historically, Blount Memorial Physicians Group (BMPG) surgeons prescribed weight-based enoxaparin for 14 days based on the BMI for thromboprophylaxis after a bariatric surgery.

- BMI 30-39 kg/m2 - 30 mg q12h or 40 mg daily or 0.5 mg/kg q12h or daily
- BMI ≥40 kg/m2 - 30 mg q12h or 40 mg q12h or 0.5 mg/kg q12h or daily
- High VTE-risk bariatric surgery with BMI ≤50 kg/m2 - 40 mg q12h
- BMI ≥50 kg/m2 - 60 mg q12h

Recently, our BMPG bariatric group has also adopted the use of rivaroxaban 10 mg daily for 7 days as a thromboprophylaxis option due to the ease of administration and fixed dosing regimens. The purpose of this study is to compare the safety and efficacy of rivaroxaban to weight-based enoxaparin for thromboprophylaxis in post-operative bariatric patients at Blount Memorial Hospital (BMH).

Methods:
This is an IRB-approved, retrospective cohort analysis to determine safety and efficacy differences between rivaroxaban and weight-based enoxaparin as thromboprophylaxis post bariatric surgery. Electronic Health Record (EHR) reports have been generated to identify the bariatric patients being discharged on either enoxaparin or rivaroxaban after the surgery. NextGen EHR has been utilized to assess for any thrombotic or bleeding events at the post-op follow up visits. The primary objective is to compare major thrombotic events with rivaroxaban versus weight-based enoxaparin at 14 days or 28 days. The secondary objectives are to compare major and minor bleeding events and minor thrombotic events with rivaroxaban versus weight-based enoxaparin at 14 days or 28 days.

Results:
Of the 170 patients screened, 80 patients in enoxaparin group and 56 patients in rivaroxaban group met the

inclusion criteria. Thrombotic events were not reported in either group. Major and minor bleeding events were observed in four total patients (two major and two minor bleeds) in enoxaparin group and two total patients (one major and one minor bleed) in rivaroxaban group.

Conclusion:
In this retrospective cohort analysis, rivaroxaban was equally effective compared to enoxaparin group secondary to absence of thrombotic events. Moreover, it resulted in less bleeding events compared to enoxaparin.

References:

1. Winegar D, Sherif B, Pate V, DeMaria EJ. Venous thromboembolism after bariatric surgery performed by Bariatric Surgery Center of Excellence Participants: analysis of the Bariatric Outcomes Longitudinal Database. Surg Obes Relat Dis. 2011;7(2):181-188.
2. Gould MK, Garcia DA, Wren SM, et al. Prevention of VTE in nonorthopedic surgical patients: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2012;141(2)(suppl):e227S-e277S.
3. Kröll D, Nett PC, Rommers N, et al. Efficacy and Safety of Rivaroxaban for Postoperative Thromboprophylaxis in Patients After Bariatric Surgery: A Randomized Clinical Trial. *JAMA Netw Open.* 2023;6(5):e2315241.

global: Y

12:20pm – 12:35pm L **The Impact of Pharmacist-Led Medication Reconciliation in High-Risk Patient Populations**

Parthenon 1

Moderators: Grace An

Presenters: Qynn Celichowski

Evaluators: Helen Bryant

The Impact of Pharmacist-Led Medication Reconciliation in High-Risk Patient Populations

Qynn Celichowski

Parkridge Medical Center

Objective: List potential errors that may occur if a proper medication reconciliation is not performed.

Self-Assessment Question: When should a medication reconciliation be completed?

Background: Pharmacist-led medication reconciliation can help reduce medication errors, adverse effects, readmissions, and more by providing updated medication lists, resolving discrepancies, and preventing duplicate and wrong therapy. Medication Reconciliation is the process of obtaining current and accurate medication information for a patient upon admission, transfer, and discharge. This process is crucial in providing accurate home medication lists for inpatient use and discharge instructions. The purpose of this study was to evaluate the effects of pharmacy involvement in the medication reconciliation process in high-risk patient populations.

Methods: A single-center prospective review of the effects of pharmacy-led medication reconciliation was performed. Medication reconciliations were completed by a pharmacy resident in high-risk patient populations identified by a clinical pharmacy workflow tool. These populations are defined as those with chronic obstructive pulmonary disease (COPD), heart failure (HF), pneumonia, acute myocardial infarction (AMI), coronary artery bypass graft surgery (CABG), and elective primary total hip arthroplasty and/or total knee arthroplasty (THA/TKA). The pharmacy resident documented time spent on medication reconciliation, total number of medications, omissions, duplications, wrong drugs, and inaccurate dosages.

Results: There were 54 medication reconciliations completed by the pharmacy resident. 42.6% of patients were 30-day re-admissions. On average, it took 20 minutes to complete a medication reconciliation. The average number of medications was 13, the average number of medications omitted was 2, and the average number of wrong dosages and medications was 3.

Conclusion: The current data suggests the need for pharmacy involvement in the medication reconciliation process. Numerous discrepancies have been identified and addressed through the implementation of pharmacy-led medication reconciliation process.

global: Y

12:20pm – 12:35pm O **Effect of Standard vs. Rapid Infusion Oxaliplatin on Neuropathy and Patient Outcomes in Colorectal Cancer** Olympia 2

Moderators: Sheema Hallaji
Presenters: Sara Niazi
Evaluators: Elizabeth Oglesby

Title: **Effect of Standard vs. Rapid Infusion Oxaliplatin on Neuropathy and Patient Outcomes in Colorectal Cancer**

Authors: Sara Niazi, PharmD; Matthew Zakhari, PharmD; Courtney Mallon, PharmD, BCOP; Stephen Aiken, PharmD, BCOP

Objective: The purpose of this study is to assess the impact of oxaliplatin infusion rate on incidence of early oxaliplatin discontinuation due to neuropathy and patient outcomes in colorectal cancer.

Self Assessment Question:
Which is a well-known side effect of oxaliplatin treatment, sometimes leading to discontinuations/dose reductions of the medication?

1. Cardiac toxicity
2. Hyperglycemia
3. Rash
4. **Peripheral Neuropathy**

Background: National Comprehensive Cancer Network guidelines state oxaliplatin may be administered at 1 mg/m2/min in gastrointestinal-related malignancy treatment regimens, based on results by Cercek et al. in 2016. A study in 2023 by Huynh et al. found increased incidence of peripheral neuropathy and oxaliplatin discontinuation with rapid compared with standard-rate oxaliplatin infusions. There is a lack of studies evaluating patient outcomes secondary to early discontinuation of oxaliplatin associated with rapid-infusion rates.

Methods: This was a retrospective chart review of adult patients receiving oxaliplatin at the standard-infusion vs. rapid-infusion rate at a single institution academic medical center from January 2016 - December 2024. The primary endpoint was incidence of early oxaliplatin discontinuation due to neuropathy. Secondary outcomes included incidence of oxaliplatin dose reductions due to neuropathy and time to progression after starting an oxaliplatin-containing regimen. Patients were included if they received an oxaliplatin-containing regimen for colorectal cancer. Patients were excluded if they were treated with >1 active chemotherapy regimen, in a vulnerable population, and had a clearly documented transition of care to a different facility.

Results: The percentage of patients with colon cancer studied was higher than those with rectal cancer in both the standard infusion rate (66.9% and 33.1%, respectively) and the rapid infusion group (70.5% and 29.5%, respectively). The distribution of cancer regimens used in the rapid vs standard infusion groups was similar, with the most common being mFOLFOX6 (74.7% in the standard rate

group and 91.7% in the rapid rate group). Rapid rate oxaliplatin was not associated with a statistically significant increase in incidence of oxaliplatin discontinuation due to peripheral neuropathy compared to standard-rate oxaliplatin, (23.7% versus 16.5%, p = 0.11). There was a difference between the percentage of dose reductions due to peripheral neuropathy between the rapid infusion rate and the standard-rate (18.7% versus 10.1%, p = 0.03). There was no significant difference in documented disease progression between the rapid versus standard-rate oxaliplatin (32.7% versus 34.8%, respectively, p = 0.69).

Conclusion: There was a clinically but not statistically significant increase in incidence of oxaliplatin discontinuation due to peripheral neuropathy in the rapid infusion rate group compared to the standard infusion rate group. However, there was a clinically and statistically significant increase in the incidence of dose reductions due to peripheral neuropathy in the rapid compared to the standard rate oxaliplatin infusion groups. Further studies need to be done to include various races, a means to gather data that may not have been documented or available in the electronic medical record, and on a larger scale.

global: Y

12:20pm – 12:35pm T **Impact of Pharmacist Discharge Review of Oral Anticoagulation Medications in Hospitalized Patients** Athena I

Moderators: Vanessa Velazco
Presenters: Courtney Self
Evaluators: Adam Sawyer

Title: Impact of Pharmacist Discharge Review of Oral Anticoagulation Medications in Hospitalized Patients

Authors: Courtney Self, PharmD; Jill McHugh, RPh, BCPS; Colin Busbee, PharmD; Rebecca Epperson, PharmD, BCPS

Objective: To assess the impact of pharmacist discharge medication review on the rate of medication errors in hospitalized patients being discharged on oral anticoagulant therapy.

Self Assessment Question: How do pharmacists' review of discharge medication reconciliations impact transitions of care in current practice?

Background: Anticoagulation therapy is considered a high-risk medication with an increased concern for causing patient harm due to clotting or bleeding if improperly prescribed. Anecdotally, there has been an increase in the number of errors found with patients' oral anticoagulant therapy on medication reconciliations at the study site. Per protocol, anticoagulants are reviewed daily during admission, but there is no standard review of discharge medication reconciliations. The purpose of this study is to assess the impact of pharmacist discharge medication review on the rate of medication errors in hospitalized patients being discharged on oral anticoagulant therapy.

Methods: This prospective, single-arm study was conducted over a three-month period to evaluate the benefit of clinical pharmacist review of the discharge medication reconciliation at a community hospital. Patients were included if they were at least 18 years of age, were discharged from either 4 North or Progressive Care units Monday-Friday from 0700-1530 between December 1, 2024-February 28, 2025, and had an oral anticoagulant on their medication reconciliation. If a patient met the inclusion criteria, the pharmacist reviewed the discharge medication reconciliation for errors found and suggested any interventions to the prescriber. The primary endpoint is to identify the total number of oral anticoagulant medication errors found in the discharge medication reconciliation and the number corrected by pharmacist intervention. Secondary endpoints include identifying the total number of other medication errors found in the discharge medication reconciliation and the number corrected by pharmacist intervention, categorizing the types of errors corrected, evaluating the rate of prescriber acceptance of interventions, and estimating the time spent on each discharge reconciliation.

Results: A total of 52 patients' discharge medication reconciliations were included in the study and reviewed. For anticoagulation therapy, 7 errors (13.5%) were found, and suggestions to fix the errors were made to the provider for all seven medication errors. Four (57.1%) medication suggestions were accepted before patient discharge. For other medications, 9 errors (1.1%) were found, and suggestions to fix the errors were made for 8 of the errors found. Two (25%) medication suggestions were accepted for the other medication group before discharge. Most errors were categorized as incomplete/inaccurate patient instructions, with 31.3% of errors falling into this category. The average time spent reviewing discharge medication reconciliations was 14 minutes.

Conclusion: Pharmacist review of discharge medication reconciliation led to reduced numbers of medication errors in both anticoagulation therapy and other therapies.

global: Y

PINNED 12:40pm – 1:50pm	**Lunch**	Ballroom EF
PINNED 12:45pm – 1:15pm	**Product Theater** *Sponsors: JJ Innovative Medicine*	Ballroom EF

1:50pm – 2:05pm

A **Evaluation of the Clinical Pharmacist's Role on Interdisciplinary Rounds within an Acute Collaborative Care Unit** Olympia 1

Presenters: Ebony Crawford

Evaluators: Elizabeth Hudson, Jasmine Jones

Title: Evaluation of the Clinical Pharmacist's Role on Interdisciplinary Rounds within an Acute Collaborative Care Unit

Authors: Ebony Crawford, Pam Ku, Maegan Whitworth, Alexandra Cooper

Background: Clinical pharmacists are well established as essential members of interdisciplinary healthcare teams, particularly during bedside academic roun ds. Specifically, clinical pharmacists integrated into interdisciplinary rounds have been shown to improve patient outcomes and reduce adverse drug events and healthcare costs. However, the role and impact of pharmacists in non-academic settings, where there is less emphasis on education and more on interdisciplinary communication, efficiency, and patient through-put, remains underexplored. In April 2024, Wellstar MCG Health piloted structured non-academic interdisciplinary rounds (IDRs) led by hospital medicine providers on Acute Collaborative Care Units (ACCUs). These rounds aim to improve communication and standardize the discharge process, ultimately to optimize patient outcomes and through-put. The purpose of this study is to quantify and characterize the clinical and financial contributions of acute care medicine pharmacists participating in hospital medicine IDRs within an ACCU and to determine the optimal allocation of clinical pharmacist resources.

Methods: This was a single-center, retrospective, observational study that included patients ≥ 18 years old who were admitted to an ACCU and received at least one documented clinical pharmacy intervention between August 1st – September 30th, 2024. Data were obtained through a Cerner Report and Theradoc. The primary objective was to determine the number of daily interventions made by acute care medicine pharmacists participating in ACCU IDRs. Secondary outcomes include characterization of clinical pharmacy interventions made and daily pharmacist workload. Descriptive statistics were used for analysis.

Results: A total of 80 patients were included with a median age of 62 years (IQR 50–70), and 52.5% were male. The majority identified as white (48.8%) or Black/African American (36.3%), with a median hospital length of stay of 6 days (IQR 4–16.1). The total number of clinical pharmacist interventions documented was 174, with a median of 1.5 interventions per patient daily (IQR 1–3). The most common intervention types were dose optimization (n = 47), transitions of care at admission (n = 28), and pharmacokinetic consults (n = 27). Most interventions were accepted by prescribers (77%), while 6% were modified and 17% had an unknown/pending response. When comparing patients admitted on ≤10 vs. >10 medications at admission, there was no statistically significant difference in length of stay (6.8 vs. 5.1 days; p = 0.234). One pharmacist managed a mean of 44 patients daily, with 14 patients on ACCUs and 25 on unit-based services. Daily time allocation averaged 153.7 minutes, including preparation (56.7 min), rounding (48.3 min), and follow-up (48.7 min).

Conclusion: Clinical pharmacists in non-academic interdisciplinary rounds led to diverse clinical interventions that improved medication management and care transitions. These findings support the value of pharmacists in optimizing patient care beyond academic rounding services.

Objective: To assess the clinical impact of an acute care medicine pharmacist in hospital medicine IDRs within an Acute Collaborative Care Unit (ACCU)

Assessment Question: Which of the following statements best reflects the current understanding of clinical pharmacists' roles in hospital medicine interdisciplinary rounds (IDRs)?

global: Y

1:50pm – 2:05pm B **Comparing the Impact of Pharmacist Driven Care When Patients are Enrolled in a Medical Student Telehealth Clinic** Athena D

Moderators: Lisa Woolard
Presenters: Sarah Strickland
Evaluators: Taylor Wells

Title: Comparing the Impact of Pharmacist Driven Care When Patients are Enrolled in a Medical Student Telehealth Clinic

Authors: Emily Strickland, Kate O'Connor

Objective: To determine the impact on clinical outcomes following the addition of medical student telehealth clinic encounters to patients who are followed by the internal medicine clinical pharmacist.

Self Assessment Question: True/False: Patients enrolled in the medical student telehealth clinic had a better outcome in their diabetes management than patients who were not enrolled in the medical student telehealth clinic.

Background: The involvement of clinical pharmacists in patient care within primary care clinics has been shown to significantly enhance clinical outcomes. Patients receiving care from clinical pharmacists often experience improved management of their chronic conditions. Similarly, medical students have demonstrated positive contributions to patient care, particularly in the management of chronic diseases. In recent years, the Medical College of Georgia (MCG) has established a student-run telehealth clinic that offers free services to eligible patients. These encounters focus on chronic disease management, fostering a hands-on learning environment for the students. Notably, some patients enrolled in this telehealth clinic are also under the care of an internal medicine (IM) clinical pharmacist. However, there is currently limited evidence examining the effects of incorporating medical students into the care of patients already managed by a clinical pharmacist. This study aims to explore the clinical impact on patient outcomes resulting from the addition of medical students to the care teams of patients who are already being followed by an IM clinical pharmacist. By investigating this collaborative approach, we hope to identify potential benefits, enhance chronic disease management strategies, and guide the future direction of the telehealth clinic at MCG and other institutions.

Methods: A single-center retrospective chart review was conducted at Wellstar MCG Health of patients who were 18 years or older with a diagnosis of diabetes and were followed by the IM clinical pharmacist between January 1, 2023 and December 31, 2023. This study was divided into two arms, a control arm consisting of patients who followed with the IM clinical pharmacist and the intervention arm consisting of patients who were both enrolled in the telehealth clinic and followed by the IM clinical pharmacist, and were required to have at least 1 telehealth encounter between January 1, 2023 and December 31, 2023. Patients were excluded if they were referred to the IM clinical pharmacist after enrollment in the telehealth clinic or if their HbA1c was <7% at the time of enrollment in the telehealth clinic. The primary outcome was the percent change in HbA1c from baseline to post intervention. Secondary outcomes included percent of patients with blood pressure at goal, appropriate statin use following intervention, and documentation of annual eye exam and collection of eGFR and UACR. Statistical analysis was performed using descriptive statistics.

Results: We identified 13 unique patients who met inclusion criteria in the intervention arm and included an identical number of patients in the control arm for comparison, which resulted in analysis of 26 patients. For the primary outcome of change in HbA1c from baseline to follow up the results were a -3.2 percent change for the control arm compared to-1.8 percent change in the intervention arm. Results of the secondary outcomes

included 6 patients with blood pressure at goal in the control arm compared to 9 patients in the intervention arm, which showed improvement from baseline. In both groups, all patients were on a statin or intolerance at follow up.

Conclusion: Based on the results the incorporation of medical students to care teams of patients followed by the IM clinical pharmacist provides additional benefit for chronic disease state management. The positive findings from this study support MCG's efforts to continue providing medical students with telehealth-based learning opportunities, enhance clinic functions, and improve patient outcomes. We hope the results of this can be utilized by other intuitions to grow and establish learning opportunities for medical students and improve clinical outcomes for patients.

global: Y

1:50pm – 2:05pm B **Pharmacist-Led Optimization of Sodium-Glucose Cotransporter-2 inhibitors in Veterans with Chronic Kidney Disease and Type 2 Diabetes Mellitus at the Carl Vinson VA Medical Center** Athena C

Moderators: Cristy Patille

Presenters: Luke Price

Evaluators: Carrington Royals

Submission Type: Resident Poster

Submission Category: Research-In-Progress

Submission Topic: Primary Care

Title:

Pharmacist-Led Optimization of Sodium-Glucose Cotransporter-2 inhibitors in Veterans with Chronic Kidney Disease and Type 2 Diabetes Mellitus at the Carl Vinson VA Medical Center

Purpose:

Sodium-Glucose Cotransporter-2 inhibitors (SGLT2i) have been shown to reduce Chronic Kidney Disease (CKD) progression and cardiovascular events in patients with type 2 diabetes mellitus (T2DM) and comorbid CKD. Use of SGLT2i are recommended by both the American Diabetes Association (ADA) and Kidney Disease – Improving Global Outcomes (KDIGO). At the Carl Vinson VA Medical Center (CVVAMC), it is estimated that only 35% of Veterans with T2DM and CKD are prescribed a SGLT2i. The purpose of this project is to optimize the usage of SGLT2i in Veterans diagnosed with T2DM and CKD via a pharmacist-led medication management model.

Self Assessment Question:

Which component of the nephron do SGLT2 inhibitors exert their mechanisms of action?

A. Loop of Henle

B. Distal convoluted tubule

C. Proximal tubule

D. Collecting duct

Methods:

This performance improvement project was approved by the local P&T Committee on 01/24/25. The primary objective will be to increase the percentage of Veterans with T2DM and CKD who are prescribed an SGLT2i. Veterans will be identified via the National Academic Detailing Diabetes dashboard and contacted by a clinical pharmacist practitioner (CPP) to provide education about the benefits of SGLT2i; the CPP will offer and prescribe SGLT2i using shared-decision making. Veterans will be included using the following criteria: Diagnosis of T2DM and CKD, Primary Care Assignment at Dublin Main Campus, Veteran resides in an area considered rural and high poverty, and male sex at birth. Veterans will be excluded if they have Type 1 Diabetes Mellitus, active prescription for any SGLT2i (empagliflozin, dapagliflozin, canagliflozin), documented allergy or contraindication to a SGLT2i including frequent urinary tract or genital yeast infections, active prescription for foley catheter or diapers, receiving hemodialysis, or EGFR <20 ml/min/1.73m2. Empagliflozin is on the VA National formulary and will be the preferred SGLT2i. If the Veteran agrees to empagliflozin trial, the prescription will be mailed and they will be scheduled with a CPP within 4-6 weeks to monitor change in renal function and symptoms of urinary tract/genital yeast infections.

Results:

A total of 243 Veterans were reviewed between July 2024 and March 2025. Of the 243, the majority were white (55.5%) with an average age of 74 years old. Out of the 243 eligible veterans, 82 were eligible to receive treatment. The veterans were excluded for the following reasons: 14 veterans had an eGFR < 20 ml/min, 45 veterans did not have an active diagnosis of CKD, 22 veterans did not have an active diagnosis of Type 2 Diabetes Mellitus, 31 veterans had an anion gap value > 12, 7 veterans had a documented allergy to an SGLT2, 9 had urinary issues, 11 veterans were deceased, and 17 veterans were initiated on an SGLT2i prior to review. Of the 82 veterans eligible for treatment, 20 veterans were initiated on treatment (24.39%). Veterans were not initiated on treatment for the following reasons: primary care providers not agreeable to initiation, unable to reach, hypotension, dual care and following non-va providers, and declining treatment due to shared decision making. Empagliflozin was well tolerated in those in which it was initiated, and no adverse effects have been reported to date.

Conclusion:

This pharmacist-led performance improvement project met its primary objective by increasing the usage of

SGLT2i in Veterans diagnosed with T2DM and CKD. Upon completion of the project 38.5% of patient were on SGLT2i which is an increase from the start of the project (35%). The modest increase in the percentage of patients initiated on empagliflozin is attributed to the relatively low number of patients who met inclusion criteria for the project and the unscheduled nature of initial contact.

global: Y

1:50pm – 2:05pm R **Evaluation of First Dose Intravenous Push Antibiotics in Emergency Department Sepsis Patients** Athena I

Moderators: Elly Glazier
Presenters: William Markle
Evaluators: Devon Burhoe

Title

Evaluation of First Dose Intravenous Push Antibiotics in Emergency Department Sepsis Patients

Authors

William Markle, John Norris, Matt Bamber, Caitlin Rousseau

Objective

Evaluate the effect of intravenous push (IVP) antibiotics on time to antibiotic administration and patient outcomes in emergency department sepsis-patients.

Self-Assessment Question

Surviving Sepsis Campaign recommends to administer antibiotics within 1 hour of sepsis recognition. Which of the following antibiotics should only be reconstituted with 0.9% sodium chloride?

Ceftriaxone

Cefepime

Piperacillin/Tazobactam

Meropenem

Background

Current guideline recommendations highlight the importance of timely intravenous (IV) antibiotic administration as an effective intervention in reducing sepsis-related mortality. However, timeliness of IV piggyback administration can be challenging due to preparation of antibiotics and infusion times of multiple medications. IVP antibiotics have been shown to reduce time from order to administration while having similar pharmacodynamic and adverse event profiles, but their effects on patient outcomes are not well known. The purpose of this study is to evaluate the effects of first dose IVP antibiotics on time to administration and patient

outcomes in emergency department sepsis-patients.

Methods

This study did not require IRB approval. This pre-post study consisted of a retrospective chart review of patients aged ≥18 years who presented to the emergency department of FirstHealth Moore Regional Hospital and received IV piggyback (IVPB) beta-lactam antibiotics for sepsis or septic shock from June 2024 through August 2024. Following implementation of first dose IV push antibiotics in our emergency department, a second retrospective chart review was performed on patients aged ≥18 years who presented to the emergency department of FirstHealth Moore Regional Hospital and received IVP beta-lactam antibiotics for sepsis or septic shock from January 2025 through February 2025. Patients were excluded from both retrospective chart reviews if they were aged <18 years, pregnant, incarcerated, received oral antibiotics in the emergency department, or received potentially effective antibiotics for ≥48 hours within 7 days prior to presentation. The primary outcome is time from physician order entry to receipt of appropriate antibiotics. Secondary outcomes are hospital and ICU length of stay and in hospital mortality. Prior to IVP implementation a new triaging process was implemented in the emergency department that may have led to delays in the administration of antibiotics. To account for the confounder of patients diagnosed with sepsis through this triaging process, a subgroup analysis was performed that included only patients diagnosed with sepsis through our acute care process.

Results

There were 104 patients included in the final analysis; 49 patients in the IVPB group and 55 patients in the IVP group. The median time to antibiotic administration in the IVPB group was significantly faster than in the IVP group, 37 minutes versus 54 minutes (p= 0.0373). There were no significant differences in the secondary outcomes. There were 95 patients included in the subgroup analysis; 49 patients in the IVPB group and 46 patients in the IVP group. The median time to antibiotic administration in the IVPB group was not significantly faster than in the IVP group, 37 minutes versus 45.5 minutes (p= 0.4675). There were no significant differences in secondary outcomes.

Conclusion

In the overall study population, we observed a significantly faster time to administration in patients who received IVPB antibiotics. We attributed this to the implementation of a new triaging process which rapidly triages patients presenting from the emergency department lobby and potentially leads to delay in medication administration. When comparing IVPB patients to the subgroup of IVP patients that were evaluated through our acute care process, we observed no difference in antibiotic administration time. Future work will seek to evaluate the impact of this new triaging process on delays in patient care.

global: Y

1:50pm – 2:05pm R **Optimizing Stress Ulcer Prophylaxis in Critically Ill Patients: A Pharmacist-Driven Approach to Discontinuation** Athena H

Moderators: John Carr
Presenters: Ciana Wallace
Evaluators: Kelly Rumbaugh

Title: Optimizing Stress Ulcer Prophylaxis in Critically Ill Patients: A Pharmacist-Driven Approach to Discontinuation

Authors: Ciana Wallace, Sarah Adams, Jamie McCarthy

Objective: To assess SUP medication management before and after the implementation of a standardized, pharmacist-driven guidance.

Background: Stress ulcers are superficial ulcerations that typically occur in the fundus and body of the stomach due to hospitalization. Specifically, patients in the intensive care unit (ICU) are at higher risk for stress ulcer development. Frequently, stress ulcer prophylaxis (SUP) is initiated in the ICU but infrequently discontinued when no longer indicated. The purpose of this study was to reduce inappropriate SUP continuation during hospitalization and at discharge at Piedmont Athens Regional through implementation of a pharmacist guidance document for discontinuation.

Methods: This is a single-center, pre-post interventional study on patients admitted to the medical or cardiac ICU and initiated on SUP. A standardized pharmacist-driven SUP guidance was developed to provide criteria for discontinuation of SUP and approved by critical care providers. The SUP guide was designed to discontinue SUP based on a lack of risk factors for stress ulcers. Patient charts were reviewed before and after the intervention of the SUP guide. The pre-intervention group included 50 randomly selected patients admitted between November 2023 and January 2024. The post-intervention group included 50 randomly selected patients admitted between November 2024 and January 2025. Patients ≥ 18 years of age with medical or cardiac ICU admission > 24 hours and on a proton pump inhibitor (PPI) or histamine-2-receptor antagonist (H2RA) were automatically included. The primary outcome was the number of days patients were continued on inappropriate SUP. The secondary outcome was the number of patients discharged on inappropriate SUP. Statistical analysis was completed using Microsoft Excel. Continuous data was analyzed using the Mann-Whitney U test and reported as median with interquartile range data. Categorical data was analyzed using the Chi-Square test and reported as a frequency. Statistical significance was assessed with a significance level of 0.05.

Results: A total of 100 patients were included in the study with 50 patients in both the pre-intervention and post-intervention groups. There were no significant differences in the baseline characteristics between both groups. For the primary outcome, the post-intervention group had fewer days of inappropriate SUP continuation compared to the pre-intervention group (1.1 days vs 0.2 days ($p = 0.04$). The post-intervention group had fewer days of SUP continuation compared to the pre-intervention group (4.1 days vs 5.7 days, $p = 0.03$). There were less patients discharged from the ICU and CICU on SUP between the pre-intervention and post-intervention groups (76% vs 54%, $p = 0.021$). No statistically significant difference was found in the number of patients discharged from the hospital on SUP; however, there were less patients discharged overall between the pre-intervention and post-intervention groups (20% vs 14%, $p = 0.424$).

Conclusions: The study emphasizes the impactful role of pharmacists in optimizing SUP management with a clear reduction in both overall SUP continuation and inappropriate use. These results reinforce the value of implementing a standardized approach to routinely assess SUP appropriateness. Moving forward, incorporating this guidance into an institutional protocol could help ensure consistent practice and long-term improvements in SUP management.

global: Y

1:50pm – 2:05pm R **Time to Sedation Initiation after Rapid Sequence Intubation in Various Hospital Settings** Athena G

Moderators: Grace An
Presenters: Danielle Wilson
Evaluators: Helen Bryant

Title: Time to Sedation Initiation after Rapid Sequence Intubation in Various Hospital Settings

Authors: Danielle Wilson, Christen Freeman, Megan Heath

Background: Rapid sequence intubation (RSI) is a procedure for emergency airway management. Proper administration of induction and paralytic agents leads to quicker airway control and increases the rate of first pass success with an endotracheal tube. An induction agent, such as etomidate, propofol, or ketamine, is used to sedate the patient prior to paralysis and the RSI procedure itself. Rocuronium and succinylcholine are both paralytic agents, however rocuronium has a much longer duration of action and almost always outlasts the induction agent. There should be an urgency to start adequate sedation as soon as possible following intubation to minimize wakefulness with paralysis. The purpose of this study is to assess the time to sedation initiation (in minutes) following the administration of induction and paralytic agents for RSI in different areas of the hospital at DCH Regional Medical Center, including the emergency department (ED), medical-surgical units, and intensive care units (ICUs).

Methods: Patients were screened for inclusion from August 1, 2023 to July 31, 2024. Eligible participants included those ≥ 19 years of age who underwent RSI in the ED, a medical-surgical unit, or an ICU. Retrospective chart reviews were completed for the 150 patients that were included.

Results: The median time to sedation initiation after RSI was 16.5, 58, and 23minutes in the ED, medical-surgical units, and ICUs, respectively. Etomidate was the induction agent used most commonly (91.3%), and rocuronium was the paralytic agent used most commonly (87.3%). Induction agents were dosed appropriately about 80% of the time, however paralytic agents were only dosed appropriately about 30% of the time. Appropriate post-RSI sedation was initiated 72% of the time with continuous fentanyl and propofol infusions used together most often.

Conclusion: Overall, there is a gap between RSI agent administration and post-intubation sedation in each of the hospital settings evaluated. This gap is greater in the medical-surgical units likely due to the fact that continuous sedation is not available in those areas. With etomidate and rocuronium used most often, the gaps between RSI and post-intubation sedation raise a greater concern for patients having wakefulness with paralysis. While induction agents were often dosed correctly, dosing for paralytic agents appears to be an area for significant improvement. Lastly, the majority of patients were initiated on appropriate post-intubation sedation, however all patients need to receive deep sedation following RSI while the paralytic agent is still in effect.

global: Y

1:50pm – 2:05pm | **Characterizing 24-hour pharmacist response to rapid multiplex polymerase chain reaction (rmPCR) blood culture results.** Athena A

Moderators: Rina Nath
Presenters: Noah Sanford
Evaluators: Karen Babb

Title: Characterizing 24-hour pharmacist response to rapid multiplex polymerase chain reaction (rmPCR) blood culture results.

Authors:
Noah Sanford
Elizabeth Covington
Rachel Friend
Mary Kate Lackey
Sarah Grace Gunter

Background: Rapid molecular polymerase chain reaction (rmPCR)-based blood cultures provide organism identification within hours of initial organism detection with proven positive impact on time-to-appropriate antimicrobial therapy and clinical outcomes. Pharmacist-driven rapid response programs to bacteremia identified by rmPCR have been studied with differing means of communication and limited hours of pharmacist coverage. Our study aimed to characterize 24-hour pharmacist response to rmPCR blood culture results with a focus on response differences between shifts and on time-to-appropriate antibiotics in patients hospitalized with resultant positive blood cultures.

Methods: This study was a single-center, retrospective chart review conducted on patients ≥19 years-old with positive blood cultures from November 25, 2022, to June 30, 2024, admitted to East Alabama Medical Center (EAMC). Patients were excluded if they were pregnant, prisoners, discharged or transitioned to comfort care within 8 hours of blood culture notification, or if they died within 24 hours of blood culture notification. Pharmacist shifts were divided into first (0700 to 1459), second (1500 to 2259), and third shift (2300 to 0659). The pharmacists at EAMC are alerted via Cerner when blood cultures result and review each positive result. Patients were identified using TheraDoc clinical surveillance software and randomized prior to screening for inclusion. Our primary outcome was percentage of patients requiring therapy modification after positive blood culture notification. Secondary outcomes included number and type of pharmacist intervention documented, time to pharmacist intervention, and time to optimal therapy. Between group comparisons were performed using the Chi-square, Fisher’s exact test, Mann-Whitney U test, and Kruskal Wallis depending on the data type and distribution. Normality was assessed by Shapiro-Wilk. To assess variables associated with a pharmacist intervention, a bivariate analysis was performed and variables with $P<0.200$ were included in logistic regression analysis. Statistical significance was defined by a 2-tailed p-value of less than 0.05. All statistical tests were performed using SPSS statistics software.

Results: After randomization, 150 patients were screened, and 30 patients were excluded leaving 120 patients for analysis. Baseline characteristics, including age, gender, race, Pitt bacteremia score, and Charlson Comorbidity Index, were similar among the three groups (first, second, and third shift). There was no difference in the primary outcome: 17 patients required therapy modification in the first shift group (31%), 15 (38%) in second shift, and 6 (24%) in third shift (p=0.516). Across the three shifts, there was no difference in number of patients with a pharmacist intervention documented (p=0.966), type of pharmacist intervention documented (p=0.175), time to pharmacist intervention (p=0.062) or time to optimal therapy (p=0.219). Pharmacists were more likely to intervene on patients with methicillin-susceptible *Staphylococcus aureus* bacteremia (odds ratio [OR] 5.7, 95% confidence interval [CI] 1.60 to 20.74) and less likely to intervene on patients with an infectious

disease consult (OR 0.21, 95% CI 0.084 to 0.530). Pharmacist shift was not associated with likelihood of intervention.

Conclusion: Our study showed a similar need for therapy modification across shifts, with no difference in number or type of pharmacy interventions. Strengths of our study include assessing 24-hour pharmacist services and having all pharmacists intervening rather than just antimicrobial stewardship pharmacists. Limitations include a small sample size, potential delays in pharmacist documentation, reliance on manual intervention documentation, and the retrospective nature of the study. Future studies should further explore the benefit of 24-hour pharmacist response to positive rmPCR blood culture notifications.

global: Y

1:50pm – 2:05pm | **Impact of a 2,000mg Vancomycin Loading Dose Maximum in Adult Patients** Athena B

Moderators: Nathan Wayne
Presenters: Victoria Parks
Evaluators: Krista Riche

Title: Impact of a 2,000mg Vancomycin Loading Dose Maximum in Adult Patients

Authors: Tori Parks, Sarah McDaniel, Ashley Lightfoot, Lauren Wright, Josh Settle

Background: Vancomycin is a tricyclic glycopeptide antibiotic that is used to treat gram positive infections including methicillin-resistant *Staphylococcus aureus* (MRSA) and ampicillin-resistant *Enterococcus.* Vancomycin has been associated with an increased risk of developing acute kidney injury (AKI). To try to combat this in our patients, the Baptist Health System utilizes both a vancomycin dosing protocol and InsightRx© software to dose and monitor vancomycin for antibiotic area under the curve (AUC) levels and toxicity. InsightRx© is a Bayesian dosing software that utilizes random vancomycin levels to compare individual patients to patients with similar baseline characteristics who have also been entered into the software. This allows InsightRx© to predict how patients will respond to different vancomycin dosing schedules and predict AUC levels, troughs, and toxicity levels. Previously, the Baptist Health System vancomycin dosing protocol allowed for a maximum of a 3000mg vancomycin loading dose.There was thought to be a trend upward in the amount of AKI cases that were being seen in patients who were receiving higher loading doses of vancomycin. For this reason, the protocol was updated in 2023 and went into effect in January of 2024 to reduce the maximum vancomycin loading dose to 2000mg. The objective of this study was to analyze the rates of AKI in patients who received more than a 2000mg vancomycin loading dose before the updated protocol compared to lower loading doses after the implementation of a 2000mg maximum vancomycin loading dose.

Methods: This is a investigational review board exempt, retrospective chart review conducted within the Baptist Health system from September to December. All patients admitted to Baptist Medical Center South and Baptist Medical Center East who received vancomycin were identified through an electronic report. After Investigational Review Board (IRB) exemption, a retrospective chart review from September 2023 to December 2023 before the 2000mg loading dose maximum and from January 2024 to July 2024 after the loading dose maximum were evaluated through a chart review and through InsightRx©. Data collected on qualifying patients included demographics, laboratory data, medication administration record data.

Results: A total of 50 pre-implementation and 50 post-implementation patients were reviewed. Average baseline serum creatinine was 1.36 mg/dL and 1.21 mg/dL respectively. Pre- 2000mg maximum, the rate of AKI was 18%. After the 2000mg maximum the rate of AKI was 10%. Patient receiving loading doses after the 2000mg mg loading dose maximum took longer to reach target AUC (400-600 ug/mL) than patients who received higher loading doses. The implementation of a reduced vancomycin loading dose maximum to 2000mg from 3000mg showed a slight decrease in the rates of AKI, however, these rates cannot be solely attributed to vancomycin loading doses. Reduction of the maximum vancomycin loading dose extended the time to reach therapeutic AUC levels but did not negatively impact clinical outcomes. More research is needed at a larger scale to determine if larger vancomycin loading doses are associated with higher rates of AKI.

Conclusion: The reduction of the vancomycin loading dose maximum to 2000mg decreased the incidence of AKI development by 8% though duration of vancomycin treatment increased by an average of 1.6 days, subsequently increasing the time to reach therapeutic AUC. This change in duration of therapy did not have a negative impact clinical outcomes. The concurrent administration of other nephrotoxic agents could have contributed to the AKI rate. Further research at a larger scale is needed to further analyze the effect of larger

vancomycin loading doses on AKI development. Moving forward, the Baptist Health Vancomycin Dosing policy should be evaluated to considered increasing the maximum loading dose of vancomycin to 2500mg from the current 2000mg loading dose maximum.

global: Y

1:50pm – 2:05pm L **Effects of Tramadol on Seizure Incidence in Traumatic Brain Injury Rehabilitation Inpatients**

Parthenon 1

Moderators: Hania Joudeh

Presenters: Sasha Rehmani

Evaluators: Jennifer Adema

Title: Effects of Tramadol on Seizure Incidence in Traumatic Brain Injury Rehabilitation Inpatients

Authors: Sasha Rehmani, Elisabeth Webb, Dina Nakhleh, Raeda Anderson, Chloe Sellers, Carly Warner

Background: The increased risk of seizure in patients who have suffered a traumatic brain injury (TBI) is well-documented and tramadol carries a warning for seizure risk. Research exists on whether tramadol can increase the risk of new onset seizures in the general population. However, there is little information characterizing the effects of tramadol specifically in TBI inpatients in rehabilitation settings. This study fills this gap in literature by retrospectively evaluating TBI rehabilitation inpatients. The primary objective evaluates the effect of tramadol use on seizure incidence in TBI inpatients compared to TBI inpatients who did not receive tramadol.

Methods: This study is a retrospective, single-centered cohort study focused on brain injury rehabilitation inpatients admitted and discharged between July 1, 2021 and June 31, 2024. Inclusion criteria are patients over 18 admitted with a TBI or disorder of consciousness. Exclusion criteria are patients who are pregnant, history of seizure disorder before injury, and dual spinal cord and brain injury. For inpatients who met inclusion criteria, baseline characteristics, seizure occurrence, and inpatient medication history data were collected via EPIC. Qualifying TBI inpatients who received tramadol during their admission were compared to inpatients who did not receive tramadol and incidence of seizure was evaluated in each group. Secondary objectives analyzed both the use of seizure threshold-lowering medications and tramadol on seizure incidence and the impact of antiseizure medications and tramadol on seizure incidence. Analysis of baseline characteristics was conducted with descriptive statistics. Analysis of primary and secondary endpoints was conducted using cross-tabulation with a chi-squared test and a gamma test to check the association and direction of association between the sets of variables. Additional analysis using odds ratio logistic regression was conducted. This study was approved by the Institutional Review Board.

Results: A total of 477 patients (mean age =38.18, SD =16.76) were included in this study. The sample was predominately White (77.6%) and male (78.2%). 38.6% of patients received tramadol during their inpatient stay. There was no significant relationship between the use of tramadol and the likelihood of an inpatient having a seizure at Shepherd Center. Only 6.3% of patients had a seizure during their inpatient stay, of which 2.9% did use tramadol and 3.4% did not. There was a nonsignificant association ($p = 0.139$) between the use of tramadol, use of other seizure threshold lowering medications, and the incidence of a seizure. There was a significant, strong, positive correlation ($\Gamma = 1.0$, $p=<0.001$) between taking any antiseizure medication and the event of a seizure for patients who do receive tramadol. There was also a significant, strong, positive correlation ($\Gamma= 0.928$, $p=<0.001$) between taking any antiseizure medication and the event of a seizure for patients who do not receive tramadol.

Conclusion: This study found no significant effect of tramadol use on seizure incidence in TBI inpatients compared to TBI inpatients who did not receive tramadol. These findings suggest that tramadol may be a safe and effective option for pain relief in TBI rehabilitation inpatients. Further research could improve methodological rigor by using randomized controlled trials.

1:50pm – 2:05pm L **Evaluation of Enoxaparin Dosing for Venous Thromboembolism Prophylaxis in Low Body Weight Non-Critically Ill Patients** Olympia 2

Presenters: Andrew Stewart

Evaluators: Kelly Covert

Title: Evaluation of Enoxaparin Dosing for Venous Thromboembolism Prophylaxis in Low Body Weight Non-Critically Ill Patients

Authors: Andrew Stewart, Alisha B. Terry, Eric Shaw

Background: Enoxaparin is an anticoagulant used for venous thromboembolism (VTE) prophylaxis and treatment. Standard dosing for VTE prophylaxis in adult medical patients is 40 mg daily. There is currently guidance for the dosing of enoxaparin for obese patients with a BMI ≥40 kg/m2 but there is minimal guidance for patients with low body weight who are not in the intensive care unit. This study aims to assess the safety and efficacy of reduced dosing strategies for low body weight patients under 50 kg. A retrospective study by Yam et al. found that enoxaparin 30 mg daily achieved target anti-Xa levels in about 74% of low-weight patients without significantly increasing bleeding risk. Other studies, including those by Nemeth et al., Barba et al., and Dybdahl et al., reported no significant difference in bleeding risk between standard and reduced dosing. However, Buckheit et al. and Cappetto et al. found reduced doses were associated with fewer bleeding events. This study compared dosing strategies, evaluated anti-Xa levels, and assessed bleeding and thrombotic events to determine the optimal approach for low body weight, non-critically ill patients.

Methods: This was a retrospective cohort study that was conducted from January 1, 2020, to August 30, 2024, at a 711-bed hospital. It included adult patients, weighing ≤50 kg, who received enoxaparin for VTE prophylaxis for at least 3 days, and had anti-Xa levels measured 3-5 hours after at least the third consecutive dose. Exclusion criteria included patients presenting with a bleed or thrombi, those on anticoagulation on admission, creatinine clearance <30 mL/min, admitted to the ICU, on an orthopedic or trauma service, received an alternative dose of enoxaparin for ≥2 days unless indicated by anti-Xa, did not receive VTE prophylaxis for 48 hours after admission, and pregnant or incarcerated patients. The study compared enoxaparin 20 mg daily vs. 30 mg daily for VTE prophylaxis. The primary outcome was the percentage of patients achieving target anti-Xa levels (0.2-0.4 IU/mL). Secondary outcomes included bleeding (gastrointestinal, genitourinary, hemoptysis, epistaxis, and surgical sites bleeds) and thrombotic events (VTE, pulmonary embolism).

Results: Of the 1368 patients that were screened, 54 patients were included in the final analysis. Forty-four patients received enoxaparin 30 mg daily and 10 patients received enoxaparin 20 mg daily for VTE prophylaxis. For the primary outcome, the mean anti-Xa level was 0.30 (±0.13) for the 30 mg group and 0.17 (±0.09) for the 20 mg group. The number of patients whose anti-Xa level was in goal for the 30 mg group was 33 (75%) and the number for the 20 mg group was 3 (30%). For the secondary outcomes neither group had a clotting event but the 30 mg group had 2 bleeding events.

Conclusion: This study found that 20 mg of enoxaparin daily for VTE prophylaxis does not on average provide therapeutic anti-Xa levels for non-critically ill adult patients that weigh less than 50 kg. Enoxaparin 30 mg daily for VTE prophylaxis does on average provide therapeutic anti-Xa levels for the specified patient population. Enoxaparin 30 mg daily had more bleeding events compared to 20 mg daily. Therefore, based on this study, non-critically ill adult patients that weigh less than 50 kg should be started on enoxaparin 30 mg daily for VTE prophylaxis because this will result in more therapeutic anti-Xa levels.

global: Y

1:50pm – 2:05pm L **Opioid Prescribing Habits in a High-Risk Patient Population** Parthenon 2

Moderators: Deborah Hobbs
Presenters: Emily Brackett
Evaluators: Nathanial Swanson

Author names: **Emily Brackett, Emily Rudisell, Carrie Ellison, DeVon Suber, Ismaeel Yunusa**

Background: Pain-related hospital admissions are prevalent in the United States, and in 2016, the CDC released guidelines to assist clinicians with opioid prescribing at discharge. Patients aged ≥ 65 years are particularly vulnerable to inadequate pain control and adverse effects, including dizziness, drowsiness, and constipation. The presence of non-opioid alternatives on the BEERs list further complicates pain management. The CDC recommends the lowest effective opioid dose, with reassessment for doses >50 morphine milliequivalents per day. Prisma Health lacks a discharge opioid protocol, prompting this study to evaluate prescribing patterns in opioid-naïve geriatric patients.

Methods: This retrospective cohort study included patients aged ≥65 years admitted to Prisma Health Richland between January 1, 2024, and August 1, 2024. Eligibility required inpatient admission and an inpatient order for at least 1 opioid for ≥24 hours. The primary objective was to quantify morphine milliequivalents (MMEs) prescribed at discharge. Secondary objectives included comparing inpatient opioid use with discharge regimens, identifying overdose risk factors based on high-risk medications and conditions, evaluating prescribing patterns by provider group, assessing length of therapy, 30-day readmission for opioid adverse reactions, as well as the impact of discharge disposition on MMEs. Statistical analysis will involve one-sample t-tests, Wilcoxon signed-rank tests, paired t-tests, chi-square, and Fisher’s exact tests.

Results: In progress

Conclusion: In progress

global: Y

1:50pm – 2:05pm D **Evaluating The Incidence of Adverse Effects Associated with High-Dose Intrapartum Vancomycin Administration for Group B Strep Prophylaxis** Athena J

Moderators: Abigayle Campbell
Presenters: Jesse Klus
Evaluators: Hannah Schmoock

Title: **Evaluating The Incidence of Adverse Effects Associated with High-Dose Intrapartum Vancomycin Administration for Group B Strep Prophylaxis**

Authors: Jesse Klus, Kendall Heetdirks, Tanya Makhlouf

Objective: Evaluate the incidence of acute kidney injury and other pertinent adverse reactions in pregnant patients receiving high-dose vancomycin for intrapartum Group B Strep prophylaxis

Self Assessment Question: MJ is a 29 YOF G1P0 at 39w5d who presents in active labor. She has had an uncomplicated pregnancy course thus far. She was found to be GBS positive and does have a high-risk allergy to penicillin. Clindamycin susceptibilities are unknown Her Scr is 0.89 and she weighs 70 kg. Which of the following would be the best regimen for GBS prophylaxis?
A.Vancomycin 1000 mg IV Q12h
B.Clindamycin 900 mg IV Q8h
C.Cefazolin 2000 mg IV Q8h
D.Vancomycin 20 mg/kg IV Q8h

Background/Purpose: Prior to the implementation of intrapartum Group B Strep (GBS) prophylaxis, GBS was the most common cause of neonatal sepsis. Approximately 50% of women who are colonized with GBS will transmit the bacteria to their newborn either during the intrapartum period or after rupture of membranes. Without the use of prophylactic antibiotics in the intrapartum period, about 1-2% of newborns exposed to GBS develop early onset infections. The American College of Obstetricians and Gynecologists (ACOG) recommends administering GBS prophylaxis to women who have either known or unknown GBS colonization to decrease the rate of transmission to the neonate. Penicillin G is the preferred agent for GBS prophylaxis; however, cefazolin can be utilized in patients who have a low-risk penicillin allergy and vancomycin is preferred in patients who have a high-risk penicillin allergy and either known or unknown resistance to clindamycin. In June 2019, the recommended vancomycin dose was increased from 1000 mg IV every 12 hours to 20 mg/kg/dose (max 2000 mg) IV every 8 hours based on studies evaluating maternal and neonatal vancomycin levels. The purpose of this study was to evaluate the incidence of adverse effects associated with high-dose vancomycin for GBS prophylaxis during labor.

Methodology: This was a multi-center, prospective, IRB approved, cohort study conducted at the Moses Cone Women's and Children's Center and Alamance Regional Medical Center in Greensboro, NC. On October 4, 2023, both centers adopted the vancomycin 20 mg/kg/dose every 8 hours dosing regimen for GBS prophylaxis in the intrapartum period. Patients were included in if their gestational age was at least 23 weeks and received at least one dose of vancomycin for GBS prophylaxis from October 1, 2022, to November 1, 2024. Patients were excluded if they received antibiotics for another indication, received an antibiotic for GBS prophylaxis other than vancomycin, had known intrauterine fetal demise, or were dialysis dependent. The primary objective was the incidence of acute kidney injury (AKI) following vancomycin dosing, as defined by an increase in serum creatinine of at least 0.3 mg/dL within 48 hours. Secondary objectives further evaluated the safety of high-dose vancomycin. Results were evaluated utilizing Fisher's Exact and two sample T-tests.

Results: A total of 93 patients were included in the analysis. There were 2 incidences of AKI in the post-group

compared to none in the pre-group (p = 0.19). There was no statistically significant difference seen in the rates of GBS infection of the newborn and vancomycin flushing reactions between groups. More doses of vancomycin were given in the post-group (2.0 vs 1.7, p = 0.14) and the dose of vancomycin was higher in the post-group (1625 mg vs 1000 mg, p < 0.001). There were no trough levels obtained in the pre-group and five trough levels obtained in the post-group. The majority of trough levels drawn in the post-group were supratherapeutic.

Conclusions: High-dose vancomycin was not associated with a significant increase in AKI. The difference seen in trough levels obtained between groups can be attributed to both increased dosing frequency in the high-dose group and overall short labor durations, making obtaining trough levels less feasible. While most of the trough levels obtained in the high-dose group were supratherapeutic, there was no indication that this resulted in increased adverse events. Additionally, the new dosing regimen provided adequate protection against GBS in newborns, as indicated by low infection rates. This evaluation demonstrates that high-dose vancomycin is a safe regimen for GBS prophylaxis in the intrapartum period. Larger evaluations are necessary to confirm the findings of this study.

global: Y

2:10pm – 2:25pm

A **Developing Pharmacy Processes for a National Group Purchasing Organization in Non-Acute Settings** Olympia 1

Presenters: Samantha Randlett

Evaluators: Elizabeth Hudson, Jasmine Jones

Title: Developing Pharmacy Processes for a National Group Purchasing Organization in Non-Acute Settings

Authors: Samantha Randlett, Alyssa Huff, Jason Braithwaite

Objective: Identify and assess components of GPO and supply chain processes that will enhance value for non-acute members.

Self-Assessment Question: How can we identify value and cost savings provided back to non-acute members that are part of a group purchasing organization?

Background: Group purchasing organizations (GPOs) have improved contracting performance and have added value to acute care facilities for many years. They do this by bringing the power of negotiation for all buyers into a unified community and provide leverage to strongly bargain with manufacturers, distributors, and vendors in the supply chain. With new healthcare policies pushing patients to receive care at lower-cost sites, healthcare leaders require adaptation to support migration to the non-acute care space. As GPOs are evolving to offer additional services and analytical insights and savings for their members, the non-acute space becomes an important area to understand.

Methods: This is a process improvement study focused on pre-specified rostered non-acute members that were active in both periods. Non-acute care sites consist of ambulatory surgery centers, physician clinics, home care, long term care, and other. Utilizing the baseline knowledge HealthTrust has on how to achieve cost savings, streamline processes, and optimize the supply chain in the acute space will allow the ability to translate into the non-acute space. Baseline data of non-acute purchases were assessed from August 2023 to January 2024. Discussions with non-acute facilities and vendors were started in August 2024. This process involved engaging manufacturers, distributors and educating members on how to optimize purchasing. The goal of this process improvement study is to provide value around specific drugs by identifying the class of trade nuances to optimize purchasing. The primary outcome is percentage of on-contract spend improvement. The secondary outcomes include important metrics such as manufacturer and distributor alignment and new contract value. To ensure better control on potential variables such as seasonality, results are based on the same timeline one year later; August 2024 to January 2025.

Results and Conclusions: Our preliminary results demonstrate the challenges and time required to ensure on-contract purchasing whether utilizing a current contract or obtaining a new one. From period 1 to period 2, there is an increase of 8% in overall total spend and increase in membership by 15%. When reviewing on-contract purchasing between periods, there is a decrease by 19% due to new visibility in data, addition of clinics within current members, contract negotiations, and overall delay in contract load after relationships are developed. Chargeback relationship awareness increased by 100% and no contract exists increased by 23%. While these are our preliminary results, this shows the continued importance to improve pharmacy processes within the GPO in the non-acute space.

global: Y

2:10pm – 2:25pm B **Are Healthcare Workers Ready to Tackle Social Determinants of Health? A Look at Current Practices and Preparedness** Athena C

Moderators: Cristy Patille
Presenters: Ariel Ford
Evaluators: Carrington Royals

Title: Are Healthcare Workers Ready to Tackle Social Determinants of Health? A Look at Current Practices and Preparedness

Author: Ariel Ford, Courtney E. Gamston, Lena McDowell, Lindsey Hohmann, Kimberly Braxton Lloyd

Background: Social determinants of health (SDoH) are non-medical factors that significantly impact health outcomes. A substantial portion of the United States adults have negative SDoH, or social risks, as reflected in key population statistics: 65.2 million live below or near the poverty line, with rural areas facing a higher poverty rate (15.4%) than the national average (12.8%) with a population of 46,108,315 living in rural areas. Additionally, 10.2% lack a high school diploma or equivalent and 26.2 million people of all ages are uninsured. A 2023 survey of Alabama pharmacists revealed that only 28% of their practice sites currently screen for SDoH, with most reporting discomfort and a lack of preparedness to assess and address these factors. This study aims to evaluate SDoH screening, referral practices, and provider readiness across healthcare disciplines in Alabama to inform strategies for improving current practices.

Methods: A 2025 anonymous survey was distributed to pharmacists, physicians, and nurses in Alabama to assess how each profession currently addresses SDoH, including screening, referrals, and follow-ups. The survey also examined provider interest in screening and managing SDoH, previous training, and perceived comfort and preparedness in identifying social needs and connecting them with local resources. Descriptive statistics were used to characterize participants, practice settings, and current approaches. Comparisons across the three provider groups were conducted using ANOVA for continuous data and Chi-square analysis for categorical variables, offering a more comprehensive understanding of SDoH screening and referral practices in Alabama.

Results: In progress

Conclusion: In progress

global: Y

2:10pm – 2:25pm B **Reducing Disparities in Blood Pressure Control Among Female Veterans with Type II Diabetes Mellitus** Athena D

Moderators: Lisa Woolard
Presenters: Victoria Clark
Evaluators: Taylor Wells

Title:
Reducing Disparities in Blood Pressure Control Among Female Veterans with Type II Diabetes Mellitus

Authors:
Victoria Clark, Schylar Hathaway, Marci Swanson, Deborah Hobbs

Objective:
Highlight the improvement in equity in hypertension control among female Veterans with diabetes via medication management.

Self-Assessment Question:
True/False – Per the ACC/AHA guidelines, the recommended BP target for patients with DM is less than 130/80 mmHg.

Background:
A majority of patients with diabetes will have a comorbidity of hypertension which increases risk of cardiovascular disease (CVD), the leading cause of death in women in the U.S. The use of antihypertensives is strongly recommended for both primary and secondary prevention of CVD. Research suggests mixed results on presence of a disparity in blood pressure control among men and women, but reveals older women are less likely to have controlled blood pressure than their male counterparts. This project aims to reduce disparities for female veterans with diabetes mellitus and uncontrolled hypertension via medication management.

Methods:
This performance improvement project was approved by the P&T Committee. The primary objective aims to improve blood pressure control in female veterans with type II diabetes. The secondary objectives are to increase percentage of female veterans on angiotensin converting enzyme inhibitors/angiotensin receptor blockers (ACEi/ARBs) and sodium-glucose co-transporter-2 (SGLT-2) inhibitors, if clinically appropriate. The Primary Care Equity Dashboard (PCED) was utilized to identify disparities in blood pressure control. This dashboard was created by using electronic quality measure (eQM) data and provides VISN (Veterans Integrated Services Network) and facility level performance via a disparity matrix. A Clinical Pharmacist Practitioner (CPP) will identify veterans using the following inclusion criteria: females aged 18 to 75, presence of type II diabetes, and blood pressure greater than or equal to 140/90 mmHg at most recent outpatient encounter. The CPP will exclude those with type I diabetes, actively followed by cardiology, no history of primary care provider follow-up within 2 years, receiving hospice/palliative care services, or relocated to outside care. The Computerized Patient Record System (CPRS) was used to review veterans' charts and determine appropriate antihypertensive therapy for blood pressure control per the 2018 ACC/AHA guidelines.

Results: In Progress

Conclusion: In Progress

global: Y

2:10pm – 2:25pm C **Correlation of 4T, m4T, and LLL Scores with Positive Heparin-induced Platelet Antibodies and Serotonin Release Assays in Cardiac Surgery ICU Patients** Athena B

Moderators: Nathan Wayne
Presenters: Alese Photiadis
Evaluators: Krista Riche

Title: Correlation of 4T, m4T, and LLL Scores with Positive Heparin-induced Platelet Antibodies and Serotonin Release Assays in Cardiac Surgery ICU Patients

Authors: Alese Photiadis, Michelle Dillon, Danielle McPherson

Objective: Evaluate the accuracy of diagnostic scoring tools used to predict heparin-induced thrombocytopenia (HIT) in cardiac surgery (CS) and mechanical circulatory support (MCS) patients.

Background/Purpose: HIT occurs in up to 5% of patients exposed to heparin. HIT is characterized by a significant fall in platelet count and a hypercoagulable state. Diagnostic scoring tools exist to risk stratify patients prior to ordering laboratory assays, which are limited by either low sensitivity or delayed turnaround times. CS and MCS patients receive large heparin doses and have other significant reasons for thrombocytopenia. This project aims to assess the accuracy of diagnostic scoring tools used to predict HIT in CS and MCS patients.

Methodology: This single center, retrospective study included adult CS and MCS patients with a positive heparin-induced platelet antibody result from August 1, 2022, to December 31, 2024. Patients were identified via reporting tools within the Epic Hyperspace platform. Patient demographic information was collected. Patients were allocated based on whether they underwent cardiac surgery only (CS Group), MCS only (MCS Group), or required a combination of CS and MCS (CS-MCS Group). Types of CS and MCS, platelet count, serotonin release assay (SRA) result, duration of heparin therapy, duration of cardiopulmonary bypass (CPB), presence of additional medications implicated in causing thrombocytopenia, time to initiation of bivalirudin, and presence of thrombus were also collected. The primary was the negative predictive values of each of the diagnostic scoring tools (4T, m4T, and LLL scores) in the CS, MCS, and CS-MCS groups. Patients were stratified into risk-categories based upon their score from each of the diagnostic scoring tools. The NPV was then calculated from the true and false negatives.

Results: One hundred fifty-eight patients were screened and 92 met inclusion with 28 in the CS Group, 44 in the MCS Group, and 20 in the CS-MCS Group. The most common reasons for exclusion were duplicate patient identifiers, veno-venous extracorporeal membrane oxygenation support, and labs drawn prior to surgery or MCS initiation. The negative predictive value (NPV) for the 4T score in the CS group was 100% for low-risk and 64% for intermediate risk patients. For the m4T score, the NPV was 90% and 80% for the low and intermediate risk groups, respectively. The NPV for the LLL score in the CS group was 100% and 74% for the low and high-risk categories. For low-risk patients in the MCS Group, the NPV of the 4T and m4T scores were 97% and 92%. For intermediate risk patients, the NPV of the 4T and m4T scores was 80% and 89%. There were no patients in the MCS Group who were classified as high risk by either score. The NPV for the 4T score in the CS-MCS group was 82%, and 63% for the low and intermediate risk categories. As for the m4T, the NPV in the CS-MCS group was 100%, and 80% for the low and intermediate risk categories. The NPV for the LLL score in the CS-MCS group was 67% and 60% for the low and high-risk categories.

Conclusion: In this study, the m4T score had the highest NPV for those undergoing cardiac surgery procedures; however, for low risk stratified patients, all three tests were reliable in ruling out HIT. In the mechanical circulatory support group, both the 4T or m4T score had high NPVs. The m4T was more reliable in the joint cardiac surgery and mechanical circulatory support group.

Presentation Objective: Evaluate the accuracy of diagnostic scoring tools used to predict heparin-induced thrombocytopenia (HIT) in cardiac surgery (CS) and mechanical circulatory support (MCS) patients

Self-Assessment Question: Based on this study, which diagnostic scoring tool(s) is the best in CS, MCS, and CS + MCS patients to rule out HIT?

A. 4T score

B. m4T score

C. LLL score

D. All the above

global: Y

2:10pm – 2:25pm R **A Comparative Analysis of Hospital Length of Stay: Phenobarbital Vs. Lorazepam in Alcohol Withdrawal Management** Athena I

Moderators: Elly Glazier
Presenters: Nathan Doherty
Evaluators: Devon Burhoe

Authors: Nathan Doherty, Michael Saavedra

Objective: Analyze whether the use of phenobarbital reduced the length of hospital stay vs lorazepam in patients experiencing alcohol withdrawal.

Background: Alcohol withdrawal syndrome is a potentially life-threatening condition requiring immediate management. The American Society of Addiction Medicine (ASAM) recommends benzodiazepines, such as lorazepam, as the first-line treatment to prevent the signs and symptoms of alcohol withdrawal including seizures and delirium. Phenobarbital is advised as an alternative to benzodiazepines when benzodiazepines are contraindicated or as an adjunct to benzodiazepines. On June 5th, 2024, our health system added phenobarbital to our alcohol withdrawal order set for ICU patients. The objective of this project is to identify whether phenobarbital decreases the length of hospital stays for patients experiencing alcohol withdrawals when compared to lorazepam.

Methods: This single-center, retrospective cohort study included patients diagnosed with alcohol withdrawal syndrome who were treated with either phenobarbital or lorazepam at Parkridge Medical Center (PMC) and Parkridge East Hospital (PEH). Data was collected from electronic medical records to assess total hospital length of stay, incidence of delirium, and safety outcomes. Delirium episodes were identified based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria. Safety outcomes were evaluated by assessing the incidence of profound respiratory depression requiring respiratory support. Data was collected between June 5, 2024, and January 1, 2025. Statistical significance was determined using a Student's t-test.

Results: The average hospital length of stay (LOS) at PMC was 8.2 days for patients who received phenobarbital compared to 4.36 days for those who received lorazepam alone (P = 0.0070). At PEH, the average LOS was similar between the phenobarbital and lorazepam groups (3.79 vs. 3.91 days, P = 0.75). The incidence of delirium at PMC was 1.0 in the phenobarbital group versus 0.70 in the lorazepam group (P = 0.57). At PEH, the incidence of delirium was 0.65 for patients receiving phenobarbital compared to 1.16 for those receiving lorazepam (P = 0.094). Notably, no patients in either group required respiratory support following the initiation of phenobarbital or lorazepam.

Conclusion: A statistically significant difference in hospital length of stay at PMC was observed between patients who received phenobarbital versus those who received lorazepam alone. However, this finding is confounded by the presence of two significant outliers in the phenobarbital group (35 days and 20 days) and the small sample size (n=19). Additionally, a key limitation to phenobarbital use at our facility is the requirement for ICU monitoring, which may serve as a barrier to prescribing it over lorazepam. Notably, most patients at PEH presented with a chief complaint of alcohol withdrawal, whereas patients at PMC were critically ill, with alcohol withdrawal being a secondary diagnosis. This distinction may have contributed to prolonged hospitalization for patients in the PMC group, even after alcohol withdrawal syndrome was managed. Importantly, no patients in either group experienced respiratory depression requiring respiratory support. Given these findings, reconsideration of the ICU restriction for phenobarbital administration should be explored, as it may increase utilization and eliminate the need for inpatient phenobarbital taper completion, potentially expediting discharge. Future studies with larger sample sizes are warranted to further assess the impact of phenobarbital, either as monotherapy or in combination with lorazepam, on hospital LOS.

NTD76@live.com

global: Y

2:10pm – 2:25pm R **Assessment of the Implementation of a fixed dose PCC protocol** Athena H

Moderators: John Carr
Presenters: Loren Proctor
Evaluators: Kelly Rumbaugh

Title: Assessment of the Implementation of a fixed dose PCC protocol

Authors: Loren Proctor, Patrick Blakenship, Kyle Allmond, Brad Crane, Madison Sullivan, and Joy Bussey

Background: In August 2023, Blount Memorial Hospital (BMH) undertook a significant change in its protocol for managing anticoagulation reversal by transitioning from a weight-based activated 4-factor prothrombin complex concentrate (FEIBA) to a fixed-dose inactivated 4-factor prothrombin complex concentrate (KCENTRA). For several years prior to this transition, FEIBA had been the preferred agent for reversing anticoagulation. Since its adoption in 2016, FEIBA had served as the cornerstone for managing patients in the Emergency Department (ED) who required urgent anticoagulation reversal due to its efficacy in counteracting the effects of anticoagulation. However, the decision was made to move to KCENTRA, a fixed-dose product known for its precision and reliability in critical interventions. Historically, BMH has seen a consistent need for 4-factor prothrombin complex concentrates, with approximately 2 to 3 patients in the ED each month requiring this type of intervention. The introduction of KCENTRA is expected to streamline the administration process and enhance the overall effectiveness of anticoagulation reversal, reflecting the hospital's dedication to continuous improvement and patient safety in emergency care.

Methods:
This is an IRB-approved, retrospective analysis study to evaluate the effects of the transition from weight-based activated 4-factor prothrombin complex concentrate (FEIBA) to a fixed-dose inactivated 4-factor prothrombin complex concentrate (KCENTRA) at BMH. A report will be generated for all patients who received 4-factor PCC for Xa inhibitor reversal in the ED. This includes documentation of the order submission to drug administration and the subsequent verification by the pharmacist. Additionally, there will be a collection and assessment of the financial aspects related to the administration of 4-factor PCC for Xa inhibitor reversal.

The primary objective will compare the time from order submission to administration time between FEIBA and KCENTRA. As for the secondary objectives, evaluation of the duration from order submission to pharmacist verification, as well as the assessment of the financial impact of transitioning from a weight-based dosing regimen to a fixed dosing regimen will be analyzed.

Results: When comparing the time difference from order submission to administration time, it was found that weight-based dosing (FEIBA) was significantly faster than fixed-dose (KCENTRA) by 6 minutes. When comparing the time difference from order submission to pharmacist verification, it was found that weight-based dosing (FEIBA) was faster than fixed-dose (KCENTRA) by 1.3 minutes. However, when analyzing finances, it was found that fixed-dose (KCENTRA) surpassed weight-based dosing (FEIBA) due to its significant financial savings of $4,053 per patient.

Conclusion: The data we collected in regard to order submission, administration time, and pharmacist verification all favored weight-based dosing (FEIBA). However, due to the significant financial savings with fixed-dose (KCENTRA), our institution continued with fixed-dose (KCENTRA) as the 4F-PCC of choice.

Self-Assessment Question: True or False: When changing from FEIBA® to KCENTRA®, the financial impact was more beneficial.

global: Y

2:10pm – 2:25pm R **Safety and Efficacy of Alternative Insulin Dosing Strategies for the Management of Hyperkalemia** Athena G

Moderators: April Quidley
Presenters: Savannah Small
Evaluators: Christina Thurber

Title: Safety and Efficacy of Alternative Insulin Dosing Strategies for the Management of Hyperkalemia

Authors: Savannah Small, Amanda Guffey, Erik Turgeon

Background: Hyperkalemia is a common electrolyte disorder that can lead to serious complications, and potentially life threatening cardiac arrythmias, if not managed appropriately. IV regular insulin is typically used in combination with other treatment strategies for the management of acute hyperkalemia due to its quick onset and modest duration. Current guidelines recommend administering insulin as an IV bolus of 10 units, typically in combination with 25-50g of dextrose to mitigate the risk of hypoglycemia. Despite coadministration with dextrose, 10 units of IV regular insulin given for the treatment of hyperkalemia, has been associated with significant rates of hypoglycemia. Some evidence suggests a lower incidence of hypoglycemia with comparable potassium lowering when utilizing 5 units as an IV bolus compared to 10 units of IV regular insulin.

Methods: Pre- and post-intervention chart review of hospital-wide hyperkalemia treatment encounters at a single-center, 607-bed teaching hospital in West Columbia, SC from October 2023 to April 2025. The intervention of this study is the modification of current hyperkalemia order sets from a default IV regular insulin dose of 10 units to a default of 5 units. This review will be utilized to compare the safety and efficacy of IV regular insulin administered at 5 units vs 10 units. The primary outcome is the incidence of clinically significant hypoglycemic events, defined as a blood glucose level less than 70 mg/dL, associated with IV insulin administration for the treatment of hyperkalemia. Secondary outcomes include potassium lowering effects of each IV insulin dosing strategy for the treatment of hyperkalemia and any relevant severe hypoglycemic events, defined as blood glucose levels less than 40 mg/dL. Hypoglycemic events and change in serum potassium levels were manually analyzed by the investigator through EHR-generated data and manual chart review.

Results: In progress.
Conclusion: In Progress.

global: Y

2:10pm – 2:25pm | **Impact of Cefoxitin Monotherapy Versus Traditional Antimicrobial Therapy on Time to Antibiotic Administration in Intra-amniotic Infections: A Retrospective Review** Athena A

Moderators: Rina Nath

Presenters: Hannah Bischoff

Evaluators: Karen Babb

Title: Impact of Cefoxitin Monotherapy Versus Traditional Antimicrobial Therapy on Time to Antibiotic Administration in Intra-amniotic Infections: A Retrospective Review

Authors: Hannah Bischoff, Sarah Withers, Caroline Jozefczyk, Joseph Kohn, R. Jake Crocker, Jasmine Lewis, Carolyn Ellison, Alex Ewing, Pamela Bailey

Objective: Compare the time to antibiotic administration between cefoxitin and the standard of care therapy by measuring the time from when the antibiotic(s) were ordered to the completion of either cefoxitin administration or the completion of both ampicillin and gentamicin administrations.

Self-Assessment Question: Which of the following antimicrobial regimens for empiric coverage of suspected or diagnosed chorioamnionitis demonstrated faster time to administration?

Background: Intra-amniotic infections, like chorioamnionitis, are treated with antimicrobials to reduce maternal and neonatal morbidity and mortality. The American College of Obstetricians and Gynecologists (ACOG) recommends ampicillin and gentamicin as first-line therapy, with clindamycin in cesarean sections for expanded anaerobic coverage. Cefoxitin, a second-generation cephalosporin, offers robust coverage and is a recommended alternative agent. Studies have shown no significant differences in efficacy between cefoxitin and other treatments for obstetric infections. Due to concerns with traditional therapies, such as nephrotoxicity from gentamicin and *Clostridioides difficile* infections from clindamycin, cefoxitin has emerged as an effective single-agent alternative. A recent study in South Carolina demonstrated that cefoxitin is non-inferior to traditional antimicrobial therapy for treating chorioamnionitis. This study aims to compare the time to antibiotic administration between cefoxitin and traditional antimicrobial therapy of ampicillin and gentamicin, addressing a gap in research on timely treatment for intra-amniotic infections in alignment with ACOG's recommendation to administer antibiotics promptly upon diagnosis.

Methods: This multi-site, retrospective cohort study compared treatment outcomes for chorioamnionitis at Prisma Health sites in South Carolina. The pre-cefoxitin group, treated with ampicillin, gentamicin, with or without clindamycin from June 2022 to May 2023, was compared to the post-cefoxitin group, treated with cefoxitin from June 2023 to May 2024, following an update to institutional guidelines. All pregnant individuals aged 16 and older, with diagnosed or presumed chorioamnionitis, were included.

Results: A total of 300 patients were included, 150 in both the traditional therapy and cefoxitin group. Baseline characteristics were similar between the traditional therapy and cefoxitin groups, with no statistically significant differences in age (25.4 ± 5.6 vs. 26.3 ± 6.0 years), race distribution, or length of hospital stay (3.3 vs. 3.2 days). Most patients in each group identified as White (45.3% vs. 41.7%), followed by Black (28.7% vs. 20.7%) and Hispanic (18.7% vs. 27.3%). The majority were not Hispanic or Latino (76.7% vs. 68.0%). Vaginal delivery was the most common mode of birth (63.3% vs. 55.3%), with similar rates of cesarean delivery (34.7% vs. 39.3%) and labor induction (62.0% vs. 58.7%). A negative Group B *Streptococcus* screen was reported in most patients (78.7% vs. 73.3%).

Receipt of antimicrobials within 60–90 minutes of order entry occurred in significantly more patients in the cefoxitin group compared to the traditional therapy group (69.3% vs. 4.7%, $p < 0.001$). Time to effective therapy was significantly shorter in the cefoxitin group (76.4 ± 93.3 vs. 183.7 ± 228.9 minutes, $p < 0.001$). Duration of therapy was similar between groups (1.25 ± 0.89 vs. 1.28 ± 1.32 days, p = NS). There were no statistically significant differences in ICU admissions (0 vs. 1 patient), mortality, 30-day infection-related readmission, or need for additional surgical/procedural intervention.

Conclusions: Cefoxitin use for chorioamnionitis significantly improves the time to effective antibiotic treatment, aligning with current guideline recommendations for prompt therapy. The absence of differences in secondary outcomes reinforces the clinical efficacy of cefoxitin, supporting its continued adoption as a first-line agent in the management of chorioamnionitis.

global: Y

2:10pm – 2:25pm L **Evaluate safety of DPP4 inhibitors versus mealtime insulin for glycemic control in non-critically ill-hospitalized patients** Parthenon 1

Moderators: Hania Joudeh
Presenters: Graylon Cross-Penn
Evaluators: Jennifer Adema

Evaluate safety of DPP4 inhibitors versus mealtime insulin for glycemic control in non-critically ill-hospitalized patients

Graylon Cross-Penn, Aayush Patel, McKenzie Hodges, Kelly Carter
Piedmont Columbus Regional Midtown – Columbus, GA

Background: The management of hyperglycemia in non-critically ill hospitalized patients with type 2 diabetes is often complex and requires a careful balance between glycemic control and the risk of hypoglycemia. Insulin is a common therapy in the inpatient setting, but it carries a risk of hypoglycemia, particularly in patients with lower baseline insulin requirements. Hypoglycemia leads to adverse clinical outcomes, including cardiovascular events, neurological impairment, and prolonged hospitalizations. These risks highlight the need for alternative approach which maintains glycemic control while minimizing the risk of hypoglycemia. Dipeptidyl peptidase-4 inhibitors (DPP-4i) have emerged as a potential alternative for specific populations due to their favorable safety profile, oral route of administration, and tolerability. However, evidence comparing the safety of DPP-4 inhibitors versus insulin in the inpatient setting is limited. This study aimed to address this gap by evaluating the incidence of hypoglycemia and other glycemic outcomes in non-critically ill hospitalized patients receiving either DPP-4 inhibitors or mealtime insulin. The findings may provide critical insights into optimizing glycemic management strategies for hospitalized patients, improving patient outcomes and resource utilization.
Methods: The study reviewed the medical records of non-critically ill patients admitted to Piedmont Hospitals between January 2023 and December 2023. The primary objective was to compare the incidence of hypoglycemia (defined as blood glucose <70 mg/dL) between patients receiving DPP-4 inhibitors and those treated with insulin. Secondary objectives included evaluating the incidence of severe hypoglycemia (BG <50 mg/dL), mean daily blood glucose levels, incidence of hyperglycemia (BG >180 mg/dL), length of hospital stay, total daily insulin requirements, and the number of injections per day.
Patients were included if they were aged 18 years or older, A1C <8% and on outpatient diabetes regimens involving diet alone, oral antidiabetic agents, or insulin therapy of less than 0.5 units/kg/day. Patients were excluded if they were admitted with diabetic ketoacidosis or hyperosmolar state, history of type 1 diabetes, recent glucocorticoid use, ICU admission, history of gallstones, cholecystitis, gallbladder cancer or pancreatitis, blood sugar greater than 400 or less than 70 on admission, patients that underwent surgery, with triglycerides >150 mg/dL, or if they were unable to take oral medications. Statistical analysis was conducted using independent t-tests for primary and secondary outcomes.

Results: In the insulin-only group, there were 14 recorded hypoglycemic events. In the linagliptin with or without insulin group, there were 13 events.
The statistical analysis yielded a p-value of 0.897, indicating no significant difference between the two groups in terms of hypoglycemia risk. The linagliptin and insulin group was much lower with the average daily insulin requirements at 3.94 vs 8.77. This was the only category of the original study that was statistically significant out of the secondary outcomes. The linagliptin group shows significantly higher drug costs—$142.84 compared to $14.57 in the insulin-only group—primarily driven by the high cost of linagliptin ($21/day). When analyzing the linagliptin group only (a subgroup from the linagliptin and correctional insulin) the linagliptin only group out performed the insulin only group, yielding a p-value of 0.029. When further analyzing the linagliptin only subgroup versus the insulin only, it was also statistically significant when comparing average daily blood glucose, number of injections and average daily insulin requirements.

Conclusion: These findings suggest that, in our study population, the addition of a DPP-4 inhibitor did not

significantly impact hypoglycemia incidence compared to insulin alone. The total mean cost per patient is nearly 10 times higher in the linagliptin group, highlighting the importance of weighing clinical benefits against financial impact when considering DPP-4 inhibitors in inpatient settings. Standard deviations reflect variability in hospital length of stay. While this chart review provides valuable insights, there are several limitations to consider. First, the data does not represent the United States. Using only linagliptin can be limiting as different DPP4i may have varying efficacy, safety profiles, and patient responses. Additionally, there is differences in diabetes management, which differs across healthcare providers, hospitals, and standard of care groups. These differences in management strategies can impact the consistency of findings and should be considered when interpreting the results. In our analysis, the use of DPP-4 inhibitors was found to be statistically significant when evaluating daily insulin requirements. This suggests that patients on a DPP-4 inhibitor may have different insulin needs compared to those on insulin alone. However, from a cost-effectiveness standpoint, continuing insulin therapy remains a viable and practical option. While our findings provide insight into the potential impact of DPP-4 inhibitors, larger studies with more robust sample sizes are needed to further evaluate their role in non-critically ill hospitalized patients, especially with the linagliptin only group versus insulin only treatment arms.

Contact: graylon.cross-penn@piedmont.org

global: Y

2:10pm – 2:25pm L **Evaluation of Direct Oral Anticoagulant Utilization for Venous Thromboembolism Treatment in Obese Spinal Cord Injury Rehabilitation Patients** Olympia 2

Presenters: Bryce Lackey

Evaluators: Kelly Covert

Title: Evaluation of Direct Oral Anticoagulant Utilization for Venous Thromboembolism Treatment in Obese Spinal Cord Injury Rehabilitation Patients

Authors: Bryce Lackey, Virginia Montgomery, Dina Nakhleh, Raeda Anderson, Chloe Sellers, Carly B. Warner

Background: Venous thromboembolism (VTE) is a continuous risk for hospitalized patients. Trauma, hypercoagulability, and sedentary lifestyle can increase risk of VTE due to venostasis and clotting factor proliferation. Each of these factors occurs following a spinal cord injury (SCI). Direct oral anticoagulants (DOAC) represent the mainstay of guideline recommended treatment for VTE. Literature on DOAC use in obesity is evolving, but guidance is limited for DOAC use in patients with both SCI and obesity. This study aims to evaluate DOAC use for VTE treatment in patients with SCI and obesity.

Methods: A retrospective, single center, cohort study was performed of obese SCI rehabilitation inpatients treated for VTE with a DOAC between July 1, 2019, and July 31, 2024. The primary objective evaluated the effectiveness of DOAC therapy at preventing recurrent VTE. Secondary objectives determined the frequency of anticoagulation interruptions, compared rates of VTE recurrence between American Spinal Injury Association (ASIA) scores (ASIA A, B, C, D, and E), and described bleeding events requiring blood transfusions. For patients meeting inclusion criteria, data collected included: baseline characteristics, select past medical history, body mass index (BMI), weight, level of SCI, ASIA impairment scale, DOAC regimen, and type of VTE. Patients were evaluated for whether the initial VTE happened prior to admission or at Shepherd Center, and the subsequent initiation of the DOAC regimen. Those less than 18 years of age, with an indication for anticoagulation other than VTE, or a history of bariatric surgery were excluded. Data was analyzed using descriptive statistics. Normally distributed data was analyzed via crosstabulations, chi-squared, and gamma tests. This study was approved by the Institutional Review Board.

Results: The population included 72 patients with an average weight of 110.5kg and BMI of 34.7kg/m2. Average age was 43 years with 83% male and 60% quadriplegic. Patients were treated with apixaban (n=66, 92%) and rivaroxaban (n=6, 8%). Recurrent VTE occurred in eight patients (11%), including three recurrent VTEs while actively on a DOAC regimen. A DOAC interruption occurred in 25 patients (35%) including five who experienced a recurrent VTE. A majority of patients (n=39, 54%) had their initial VTE prior to admission and most (n=27) were admitted on a DOAC. The remaining 33 patients (46%) had their initial VTE while admitted with ten of those patients started on a DOAC within 24 hours of their VTE. There was no significant association between ASIA scores and the likelihood of having a recurrent VTE ($p = 0.194$). There were six patients who required a blood transfusion, and four of those six patients had an accompanying blood hemoglobin level < 7mg/dL.

Conclusions: This study explores important efficacy and safety outcomes regarding DOAC utilization in obese spinal cord injury patients. The rates of recurrent VTE, interruptions in DOAC therapy, and major bleeding suggest room for optimization in DOAC utilization. Further research, including multi-center and randomized controlled trials, is needed to validate the findings of this study.

2:10pm – 2:25pm L **Evaluation of Electronic Beta-Lactam Allergy Alert Suppression on Carbapenem Prescribing Practices** Parthenon 2

Moderators: Deborah Hobbs
Presenters: Morgan Knight
Evaluators: Nathanial Swanson

Title: Evaluation of Electronic Beta-Lactam Allergy Alert Suppression on Carbapenem Prescribing Practices

Authors: J. Morgan Knight, PharmD, MHIIM; Brandon Hawkins, PharmD, BCIDP, AAHIVP; Erin Anderson, PharmD, BCPS; Skyler Brown, PharmD, BCPS; Brooke Brown, PharmD, BCPS; John R. Yates, PharmD, BCPS; Jason Tuttle, PharmD Candidate; Samantha Walker, PharmD, BCPS

Objective: The purpose of this study is to determine if the selective suppression of beta-lactam allergy alerts leads to decreased prescribing of carbapenems.

Self Assessment Question: True/False. Selectively alert suppressing allergies based on R1 side chains significantly impacted the volume of carbapenem prescribing

Background: Beta-lactam antibiotics are commonly prescribed in the United States due to their effectiveness and tolerability. Carbapenems are frequently prescribed in the setting of a penicillin allergy due to the low probability of cross-reactivity. Reducing carbapenem prescribing is essential to decrease resistance rates. Clinical decision support assisted alert suppression of beta-lactams with dissimilar side chains may promote increased prescribing of non-carbapenems.

Methods: This retrospective quasi-experimental study was approved by the institutional review board at a 710-bed academic medical center. A total of 819 patients were screened between the months of August 2020-October 2024. Patients were assigned to one of two groups: pre- or post-beta-lactam allergy alert suppression implementation. Group 1 included patients pre-alert suppression from August 1st, 2020, to September 25th, 2022. Group 2 included patients post-alert suppression from September 26th, 2022, to October 1st, 2024. Adult patients with a documented beta-lactam allergy who received at least one dose of an antibiotic were included. Exclusion criteria included allergy alerts that were unable to be suppressed due to Cerner coding limitations (e.g., drug classes listed as “penicillins,” or “cephalosporins”) and patients who only received a one-time dose pre-operatively for surgical prophylaxis. The primary outcome is the percentage of patients prescribed any carbapenem for empiric antimicrobial therapy. Secondary outcomes include percentage of patients empirically prescribed a cephalosporin, fluoroquinolone, and aztreonam, and documentation of a new beta-lactam allergy during current admission. A total of 266 patients were required to detect a 15% difference with a power of 90%.

Results: The percentage of patients prescribed any carbapenem in the pre-alert group and post-alert group were 8.04% and 5.17% (p=0.28), respectively. The percentage of patients empirically prescribed a cephalosporin in the pre-alert group versus the post-alert group was 66.7% and 75.9% (p=0.03), fluoroquinolone 4.60% and 6.32% (p=0.78), and aztreonam 6.90% and 4.02% (p=0.24), respectively. Documentation of a new beta-lactam allergy between pre-and post-groups were 2.30% and 2.87%, respectively.

Conclusion: Allergy alert suppression of beta-lactams did not result in a statistically significant difference in prescribing behavior in our study population, but carbapenem prescribing in the post-suppression cohort was numerically lower. To our knowledge, this is a unique approach to investigating allergy alert suppressions based

on side chains alone without consideration of reaction type.

global: Y

2:10pm – 2:25pm D **Optimal Enoxaparin Dosing in Children with Congenital Heart Disease Less than 1 Year of Age** Athena J

Moderators: Abigayle Campbell

Presenters: Katelyn Price

Evaluators: Hannah Schmoock

Title: Optimal Enoxaparin Dosing in Children with Congenital Heart Disease Less than 1 Year of Age

Authors: Katelyn Price, Hania Zaki, Haseena Hussain, Jennifer Sterner Allison, Helen Giannopoulos, Gary Woods, Josh Branstetter

Objective: Evaluate enoxaparin dosing regimens in children with congenital heart disease in patients less than 1 year of age.

Self Assessment Question:
Which of the following enoxaparin dosing strategies would be best to use to acheive initial therapeutic levels quicker based on the results of this study?
A. 0.75 mg/kg q12h
B. 1 mg/kg q12h
C. 1.5 mg/kg q12h
D. 1 mg/kg q24h

Background: Venous thromboembolism (VTE) prevalence amongst pediatric patients with congenital heart disease has increased over the years. Enoxaparin's pharmacokinetic properties and less intensive monitoring parameters make it a desirable treatment option. Currently, reported enoxaparin dosing strategies and their correlation to therapeutic anti-Xa levels are variable for infants aged 2 to 12 months.

Methods: This was a single center, retrospective, quasi-experimental study conducted between January 2008 and June 2023 in patients receiving therapeutic enoxaparin. Patients were divided into pre (January 2008 to December 2014) and post (June 2020 to June 2023) intervention groups, with the pre-intervention group receiving an enoxaparin dosing regimen of 1 mg/kg every 12 hours (standard dose) and post-intervention group receiving an enoxaparin dosing regimen of 1.5 mg/kg every 12 hours (high dose). Patients were included if they were between the ages of 2 to 12 months of age, admitted to the heart center, and had at least one heparin assay drawn 4-6 hours after a dose. Patients were excluded if they had thrombocytopenia defined as platelets at baseline less than 100,000 plts/μL, poor renal function defined as a creatinine clearance less than 30 ml/min, or an anti-xa goal other than 0.5 - 1 unit/ml. The primary objective was to evaluate the percent of patients who achieved initial target anti-xa levels. Secondary objectives included time to target anti-Xa level, number of dose changes needed to obtain goal anti-xa levels, and bleeding.

Results: A total of 85 patients were included in this study, 33 in the standard dose group and 52 in the high dose group. The median age was 3.73 months (IQR 3.01 to 6.53) in the standard group and 4.18 months (IQR 3.08 to 5.76) in the high dose group. There were similar demographics between both groups with the exception of more Black or African American (29 (56%) vs 8 (24%); $p = 0.003$) patients in the high dose group. More patients in the high dose group achieved initial therapeutic levels of enoxaparin (36 (69%) vs 5 (15%); $p < 0.001$). The time between initial dose of enoxaparin and first therapeutic anti-Xa level was longer in the standard dose group compared to the high dose group, respectively (87 hrs (IQR 41 to 112) vs 24 hrs (IQR 16 to 40; $p< 0.001$)). There was no difference in the incidence of minor bleeding (6 (18%) vs 5 (6%); $p = 0.084$) or major bleeding (1 (3%) vs 7 (13%); $p = 0.14$) between the standard and high dose groups, respectively.

Conclusion: High dose enoxaparin in infants with congenital heart disease resulted in a higher percentage of initial anti-Xa target attainment and a decreased time to target anti-Xa level. There was no difference in minor or major bleeding between the standard and high dose strategies. Based on our findings, it is safe and effective to dose enoxaparin higher in infants with congenital heart disease.

global: Y

2:30pm – 2:45pm A **Implementing a Population Management Tool for Specialty Gastrointestinal (GI) Medications in a Veterans Affairs Health Care System (VAHCS)** Olympia 1

Presenters: Alexandra Carlson

Evaluators: Elizabeth Hudson, Jasmine Jones

Title: Implementing a Population Management Tool for Specialty Gastrointestinal (GI) Medications in a Veterans Affairs Health Care System (VAHCS)

Authors: Alexandra Carlson, Azur Eckley

Background:

Pharmacologic therapy for moderate to severe Ulcerative Colitis (UC) and Crohn's Disease (CD) includes high-cost, high-risk biologic agents such as infliximab, adalimumab, ustekinumab, vedolizumab, and risankizumab, as well as small molecule inhibitors such as upadacitinib and tofacitinib to induce and maintain remission. Barriers to success with these agents include adherence which can lead to the development of antidrug antibodies (ADAs) and can result in a loss of response or failure of therapy. With a limited number of medication options comes the need to ensure medication appropriateness, efficacy and adherence in our Veteran patients. This project aims to develop a population health management tool to assist pharmacists in making efficient and effective interventions to encourage improved clinical outcomes and patient adherence.

Methods:

In this prospective, quality improvement project, a population management tool, or "dashboard," was created and implemented to make interventions at our local VAHCS from 11/14/24-3/14/25. Included were Veterans cared for by the Ralph H Johnson VAHCS and treated with one of either five biologic injectable agents or one oral small molecule inhibitor. Patients followed outside of our facility were excluded. Corporate Data Warehouse (CDW) program utilized to list patient name, medication, prescription details, lab values, appointment dates, and pertinent endpoint data to identify those overdue for next dose, without GI follow up and more. Our primary composite endpoint compared pre- and post-dashboard event rates of suboptimal response, which was defined by presence of >1 induction dose for select agents, short-term steroid prescriptions with UC/CD diagnosis, or admissions linked to diagnosis codes. The secondary outcome was to compare rates of nonadherence defined by patients having either delayed outpatient prescriptions based on proportion of days covered (PDC) <80%, or delayed infusion appointment if prescribed intravenous agent. The tertiary endpoint was to track the quantity and type of interventions made by a pharmacist. Clinical judgement was used to triage the urgency of interventions made and patients intervened on based on type of flag on the dashboard.

Results:

There were 110 total patients populated on the dashboard with UC or CD and prescribed one of the six select agents and this project compared event rates of both suboptimal response and nonadherence to biologics from pre- and post-dashboard periods. The primary endpoint showed a decrease in number of steroid prescriptions and re-induction doses but no improvement in number of admissions, with composite of 0.49 events per pt year in baseline period decreased to 0.25 in project period (p=0.107). Regarding the tertiary endpoint, the baseline time period reached 33 total patients, including 61 notes, and 62 interventions made while the project period reached 22 patients and included only 22 notes with a total of 139 interventions made. While there were differences in documentation of interventions, we found that overall notes per patient year decreased from 1.50 to 0.46 notes per patient year. With a statistically significant p-value of <0.001 our tertiary result highlights the utility in making efficient interventions.

Conclusion:

The Specialty GI dashboard proved to be an effective and efficient way to monitor patients on biologic agents or small molecule inhibitors for IBD showing a decrease in events rates of suboptimal response and nonadherence while increasing the amount of interventions made per patient. While only one endpoint proved to be statistically significant, this population management tool is easy to use and would benefit all members of the interdisciplinary healthcare team. Overall, increased use of this population health management tool will have a positive impact on patient-centered outcomes and encourage continued adherence to these specialty high-risk and high-cost agents.

global: Y

2:30pm – 2:45pm B **Contraception on Demand, Increasing Patient Access to Contraceptives Within the Gulf Coast Veterans Health Care System** Athena C

Moderators: Cristy Patille
Presenters: Annelle Drake
Evaluators: Carrington Royals

Title: Contraception on Demand, Increasing Patient Access to Contraceptives Within the Gulf Coast Veterans Health Care System

Authors: Annelle L. Drake, Hayley R. McCarron, Tiffany D. Jagel

Background: In 2018, approximately 9% of the Veteran population was female and is expected to increase to 17% by 2040. The general population has a 6% chance of developing Post-Traumatic Stress Disorder (PTSD) at some point in their lives, but female Veterans have a 13% chance. PSTD increases the risk of gestational diabetes, preeclampsia, preterm births, prolonged hospitalizations surrounding delivery, and increases the risk of rehospitalization. Beginning in 2021 at the VA clinics in Puget Sound and Pittsburgh, Clinical Pharmacy Practitioners (CPPs) started the Contraception on Demand program that was later awarded the VHA Shark Tank Diffusion and Excellence Promising Practice. Their CPPs then saw 74 Veterans in 6 months and counseled Veterans on contraceptive options. Veterans were able to receive either a 3-month supply of a new contraceptive or a 12-month supply of their established contraception. 77% of patients agreed to some form of contraception, and 90% of the eligible Veterans elected to receive a 12-month supply. Data also suggested that a 12-month supply would save $87.12 per patient per year, while improving patient outcomes. On March 11, 2024, the diffusion of Contraception on Demand to the Gulf Coast Veterans Health Care System (GCVHCS) was approved.

Methods: A list was compiled from within the GCVHCS, and patients who were eligible were offered a clinic visit with a PACT Clinical Pharmacy Specialist to discuss a 12-month supply of contraception. Data was captured and analyzed on the percentage of patients who agree to an appointment, those who transition to a 12-month supply, reasons for denial, and other pharmacist interventions. In addition, data was captured on the referrals for IUDs, contraindications identified, and the percentage of patients who switched to a different form of contraception. The “PharmD Tool” within CPRS was utilized to track any additional pharmacist interventions.

Results: Of 320 patients with active prescriptions for contraception, 214 (66.88%) were eligible for enrollment. 144 (67.29%) patients agreed to have an appointment scheduled, 4 (1.87%) agreed to schedule an appointment but were not contacted by scheduling assistants, 45 (21.03%) Veterans declined the appointment offer, and 21 (9.81%) Veterans were mailed letters after three unsuccessful attempts to contact. The most common reason for declining an appointment was a lack of interest. Of the 144 Veterans who agreed to an appointment, 118 (81.94%) agreed to transition to a 12-month supply of their contraceptive. 16 (11.11%) Veterans declined transitioning. 10 (6.94%) patients did not attend their appointments. During these appointments, 29 additional interventions were captured via the PharmD tool within the electronic health record. One of the most frequent intervention made was discontinuing estrogen-containing oral contraceptives, which occurred during 9 appointments. The other most frequent intervention was conducting a Veteran's annual suicide screening questionnaire, which occurred during 9 appointments as well. Other interventions included medication reconciliation, contraceptive counseling, dispensing of pregnancy tests, referrals to specialists, and recruitment to primary care clinics for disease state management.

Conclusion: Overall, female Veterans were interested in receiving a 12-month supply and expressed great satisfaction with the implementation of Contraception on Demand. One unforeseen limitation to implementing Contraception on Demand related to the expiration date of the stock at the Central Mail Order Pharmacy used by the GCVHCS. Through identifying contraindications to estrogen-containing contraceptives, stroke risks were reduced and safety improved. By converting to a 12-month supply, between 468-1,404 refill requests were eliminated for the upcoming year, depending on whether Veterans were prescribed a 1-month or a 3-month supply on their original prescription. This reduction improves Veteran's access to medication, reduces potential

lapses in care due to delays in mail, and saves Veteran's time from having to request refills from the VA.

global: Y

2:30pm – 2:45pm B **Evaluation of Pharmacists' Impact on Diabetes Care Using Cloud-based Continuous Glucose Monitoring** Athena D

Moderators: Lisa Woolard

Presenters: William Kendrick

Evaluators: Taylor Wells

Title: Evaluation of Pharmacists' Impact on Diabetes Care Using Cloud-based Continuous Glucose Monitoring

Author's names: William L. Kendrick, J. Lindsey Pitt, Shauntá M. Chamberlin, R Eric Heidel, Jeffrey A. Lewis, Kaitlyn P. North

Objective: Describe the effect of pharmacist-led diabetes management for patients using CGM devices linked to a cloud-based service versus those who use CGM devices incompatible to cloud services.

Self Assessment Question: True or False: there was a noticeable difference seen in the management of diabetes using cloud-based CGM devices.

Purpose: When patients share their data over cloud-based software, continuous glucose monitors allow pharmacists to assess glycemic control and make real-time therapy changes for patients participating in virtual or telehealth visits. It is hypothesized that the ability to make these changes in between primary care visits allows for faster glycemic control when compared to patients who utilize readers which are not compatible with cloud-based uploading. However, limited data is published in regard to pharmacist-led diabetes management using continuous glucose monitoring devices utilizing cloud-based services.

Methods: This retrospective cohort study assesses patients from an internal medicine residency clinic and a family medicine clinic at a tertiary academic medical center, where pharmacists have collaborative practice to manage diabetes. Patients were included if they were 18 years or older, had a diagnosis of type 1 or type 2 diabetes, and were current patients of their respective clinic. Patients were excluded if they were pregnant or lactating, if their diabetes was managed by an outside endocrinologist, or if they had not been followed by pharmacist for at least 3 months allowing for a follow-up A1C. Data collected from retrospective chart review included patient age, gender, type of diabetes, associated diabetic comorbidities, date of first and last pharmacist intervention utilizing CGM data, initial A1c, first follow-up A1c, most recent A1c since last pharmacist intervention, type of continuous glucose monitor, and ability for cloud-based monitoring. The two primary outcomes being assessed were the change from baseline A1c to first follow-up A1c, and the change from baseline A1c to most recent A1c since last pharmacist intervention. Consultation with a biostatistician revealed that the study would require at least 79 patients in each arm to achieve 80% power with an alpha of 0.05. Data was analyzed using mixed-effects ANOVA.

Results: Between the two primary care clinics, 121 patients were reviewed for eligibility, and 49 patients were included in the study. Of the patients enrolled, median age was 55 (IQR 46-65), 20 were female (41%), 20 were enrolled in cloud-based sharing (41%), and seven had type 2 diabetes (14%). The median days between first pharmacist consult and first follow-up A1c was 107 (IQR 66-160), and the median days between first pharmacist consult and most recent A1c was 347 (IQR 206-407). Average baseline A1c for the cloud and non-cloud groups were 9.86% vs 9.92% (p=0.88) respectively, average first follow-up A1c was 8.48 vs 8.56 (p=0.85), and average A1c at most recent follow-up was 8.53 vs 8.58 (p=0.90). The most common type of pharmacist intervention performed for each patient was medication titration (100%) followed by initiating new therapies (49%) and discontinuing therapy (10%).

Conclusion: While the retrospective study did not identify enough patients to meet the pre-specified power, there was no difference in A1c reduction between the cloud-based group and the non-cloud-based group found in the limited number of patients analyzed. Average A1c reduction of -1.4% at first follow-up A1c and -1.3% at most recent A1c for both pharmacist-managed groups. Limitations include variability in pharmacist coverage between the two clinics, poor social determinants of health in the patient population, and lack of timely cloud enrollment. Benefit incurred with cloud-based CGM utilization may come in the form of increased workflow productivity instead of directly from improved patient glycemic control.

global: Y

2:30pm – 2:45pm C **Safety outcomes with cangrelor versus eptifibatide in patients undergoing periprocedural bridging** Athena B

Moderators: Nathan Wayne
Presenters: Angkear Khorn
Evaluators: Krista Riche

Safety outcomes with cangrelor versus eptifibatide in patients undergoing periprocedural bridging

Angkear Khorn, Matt Bibb, Kelley Baxter
Ascension Saint Thomas Hospital West, TN

Objective: Evaluate the safety of cangrelor versus eptifibatide for periprocedural IV bridging in cardiac surgery patients focusing on bleeding risk categorized by the Global Use of Strategies to Open Occluded Arteries (GUSTO) criteria

Self Assessment question: Does the choice of IV bridging agent (cangrelor or eptifibatide) impact bleeding risk in patients undergoing periprocedural cardiac procedures?

Background/purpose: Periprocedural bridging with intravenous (IV) antiplatelet agents is essential for patients undergoing cardiac surgery to prevent thrombotic events while minimizing bleeding risks. Cangrelor and eptifibatide are commonly used IV bridging agents, but limited data directly compare their safety profiles. This study evaluates the bleeding risk associated with both agents using the GUSTO criteria and assesses secondary outcomes, including transfusion requirements, hospital length of stay, and cost.

Methodology: This study was a single-center retrospective chart review conducted at Ascension Saint Thomas Hospital West (ASTHW) to evaluate the safety outcomes of cangrelor versus eptifibatide in patients undergoing periprocedural bridging for cardiac procedures. The study included patients who received eptifibatide between July 22, 2018, and July 21, 2021, and those who received cangrelor between July 22, 2021, and July 21, 2024. Patients were included if they required intravenous bridging with either agent for a planned cardiac procedure. Exclusion criteria included patients with a documented allergy to either agent, those receiving the medication for indications other than cardiac bridging, pregnant individuals, and incarcerated patients. The primary outcome assessed was the incidence of bleeding events classified using the GUSTO criteria, while secondary outcomes included transfusion requirements, post-bridge length of stay, bridging duration, and cost analysis.

Results: A total of 268 patients were screened, with 66 meeting the inclusion criteria (31 in the eptifibatide group and 35 in the cangrelor group). Baseline characteristics were similar between groups, with a slightly higher proportion of male patients in the cangrelor group (78%) compared to the eptifibatide group (69%), but no significant differences in age, renal function, comorbidities, or types of cardiac procedures. There was no significant difference in bleeding events between the two groups as assessed by the GUSTO criteria. Secondary outcomes showed that transfusion requirements were higher in the eptifibatide group (42%) compared to

the cangrelor group (20%), though this difference did not reach statistical significance (p = 0.053). The median post-bridge hospital length of stay was similar between groups, with cangrelor patients staying a median of 4 days (IQR 5-12) and eptifibatide patients staying 2 days (IQR 1-6, p = 0.884). Bridging duration was also comparable, with a median of 3 days (IQR 2-4) for cangrelor and 2 days (IQR 1-2) for eptifibatide (p = 0.180). However, cost analysis revealed a significant difference, with cangrelor being substantially more expensive per patient (median $3,797, IQR $1,145-$5,727) compared to eptifibatide ($1,847, IQR $938-$2,345, p = 0.0043).

Conclusions: In this study, we observed that cangrelor and eptifibatide had no significant difference in bleeding outcomes for periprocedural cardiac bridging. Both agents showed similar bridging durations and hospital stays, though cangrelor was significantly more expensive. While eptifibatide had a trend toward higher transfusion requirements, it was not statistically significant. Cost considerations should guide agent selection and further prospective studies are needed to validate these findings.

global: Y

2:30pm – 2:45pm R **Impact of a Pharmacist Led Medication Adherence Team on A1c** Athena H

Moderators: John Carr
Presenters: Rion Poland
Evaluators: Kelly Rumbaugh

TITLE: Impact of a Pharmacist Led Medication Adherence Team on A1c

AUTHORS: Rion Poland; Niaima Geresu; Cindy Nee; Mary Katherine Cheeley

BACKGROUND: Chronic diseases such as hypertension, diabetes, and heart disease account for over 85% of healthcare spending in the United States and remain leading causes of death and disability. While clinical trials have demonstrated that optimal medication adherence improves clinical outcomes, real-world data often reveal suboptimal adherence. Time constraints and staffing limitations often impede community pharmacists' ability to effectively address medication adherence in a real-world setting. This study evaluates the effect of a pharmacist-led medication adherence program on clinical outcomes in patients with uncontrolled diabetes.

METHODS: This single-center, retrospective chart review included patients who had an A1c of 9% or higher and whose anti-diabetic medication(s) were 10 to 30 days past their refill due date at a Grady pharmacy between October 1, 2023, and March 31, 2024. Patients successfully contacted by a medication adherence pharmacist were assigned to the intervention group, while those who could not be reached were included in the control group. Patients without follow-up A1c values were excluded. The primary outcome assessed the difference in A1c change between the two groups. Secondary outcomes included the change in A1c from baseline within each group and the percentage of patients achieving an A1c goal of less than 9%.

RESULTS: A total of 391 patients were included in the study, with similar baseline characteristics between groups. The majority of patients were uninsured, on insulin therapy, and prescribed at least two antidiabetic medications. Within the intervention group, over 70% of patients were contacted once by the medication adherence pharmacist. Following the study period, over 25% of patients in both the intervention and control groups achieved an A1c below 9%, with rates of 27.4% and 26%, respectively. Regarding the primary outcome, the intervention group demonstrated a median A1c reduction of 0.7 (IQR: -0.5 to -2.2), while the control group experienced a median reduction of 0.75 (IQR: -0.8 to -1.9). The difference between groups was not statistically significant ($p = 0.302$). However, within-group analysis revealed a significant A1c reduction in both groups. In the intervention group, the median A1c decreased from 10.9 (IQR 9.8–12.5) to 10.2 (IQR 8.7–12) ($p < 0.001$). Similarly, the control group experienced a decrease from 11.0 (IQR 9.8–12.5) to 10.3 (IQR 8.8–11.9) ($p = 0.0013$). The median time between pre- and post-intervention A1c measurements was similar between groups, with the intervention group at 22 weeks (IQR 14.7–33.1) and the control group at 22.6 weeks (IQR 16.25–40.1).

CONCLUSION: While the pharmacist-led adherence intervention group was associated with a significant reduction in A1c, the degree of improvement did not differ significantly from the control group. These findings suggest that medication adherence pharmacists may positively influence patient outcomes; however, additional patient-specific factors likely contribute to A1c reduction. Future studies should explore social determinants of health, including socioeconomic status, housing stability, and provider follow-up, as potential barriers to improved adherence. Assessing these factors through patient surveys or adherence metrics, such as the percentage of days covered, may provide further insight. While additional strategies may refine adherence interventions, patient adherence remains a critical component of chronic disease management.

global: Y

2:30pm – 2:45pm R **Implementation of an Opiate Withdrawal Protocol** Athena I

Moderators: Elly Glazier
Presenters: Evan Hardbeck
Evaluators: Devon Burhoe
Title: Implementation of an Opiate Withdrawal Protocol

Authors: Evan Hardbeck, Jeremy Ray

Objective: To assess the impact of standardizing care for patients presenting with opioid withdrawal.

Self Assessment Question: Which medication when paired with frequent patient assessment significantly decreases risk of opiate overdose?

Background: Opioid dependent patients who are experiencing withdrawal symptoms are in a high-risk period due to the risk of opioid overdose as patients attempt to resolve symptoms and cravings. This is an important consideration for patients presenting to the emergency department with withdrawal symptoms as initiating appropriate management has resulted in fewer relapses for patients as well as lower mortality for such patients. Developing standardized treatment options for withdrawal patients also falls in line with the Centers for Disease Control and Prevention calling for increased involvement from emergency departments in managing opioid use disorder.

Methods: This single-center, IRC approved, pre-post implementation study evaluated all patients with confirmed or suspected opioid withdrawal admitted to a large community hospital between November 2023 and August 2024. Data was collected from the electronic medical record (EHR). Data analysis was performed using descriptive statistics, unpaired t-test, or chi-square test as appropriate. Outcomes assessed included duration (days) of detoxification pre- and post- implementation, hospital length of stay (LOS), readmission rate for opiate use disorder, clinical opiate withdrawal scale scores, adjunctive medications utilized, and adverse events. Post intervention data will utilize the same metrics for comparisons.

Results: A total of 55 patients were included with 54 in the pre-implementation group and 1 in the post-implementation group. The most common detoxification medication in the pre-implementation group was buprenorphine/naloxone (n=45, 83%) with a mean buprenorphine dose of 7.6 ± 4 mg. Additionally, COWS assessments were performed infrequently (n=7, 12.9%) with a mean score of 8 ± 2 in those assessed. The post-implementation patient received routine COWS assessments (n=1, 100%) with a mean score of 5 ± 3 and was determined to not require any detoxification with buprenorphine/naloxone. No safety events occurred in either group.

Conclusion: A larger sample size is needed to fully assess the safety and efficacy of implementing the opiate withdrawal protocol as the one post implementation patient did not require use of buprenorphine/naloxone. However, the scheduling of COWS assessments in the post-implementation patient led to frequent monitoring that was not present in the pre-implementation group which prevented potentially unnecessary use of buprenorphine/naloxone.

global: Y

2:30pm – 2:45pm R **The Role of Lacosamide in the Treatment of Status Epilepticus within a Large, Academic Health-System** Athena G

Moderators: April Quidley
Presenters: Mojibola Awe
Evaluators: Christina Thurber

Title: The Role of Lacosamide in the Treatment of Status Epilepticus within a Large, Academic Health-System
Authors: Mojibola Awe, Alexander Aubin, Krista Dumkow, Neha Naik, Chelsea Wamsley

Background: Status epilepticus (SE) is a neurologic emergency that requires prompt treatment to prevent irreversible neurologic deterioration or death. There is variance in treatment strategy after first-line administration of benzodiazepines, due to lack of clinical data to support the use of a specific second-line antiseizure medication (ASM) in SE. Lacosamide (LCM) is an ASM with compelling attributes to be considered a second-line agent, including its ability to be administered as an undiluted intravenous push and its minimal drug interactions and adverse effects. This study aimed to evaluate the current role of LCM in the treatment of SE within a large, academic health-system.

Methods: A multi-center retrospective chart review of patients admitted to Emory Healthcare hospitals between December 2020 and August 2024 was performed. Patients must have had a documented episode of SE and received at least one dose of intravenous LCM within the first 24 hours of admission to be included. The primary endpoint was the incidence of seizure termination within 6 hours of LCM administration without subsequent ASM use. Secondary outcomes reported include time from initial presentation to seizure cessation and LCM administration, incidence of LCM as the termination drug, cessation of seizure activity within an hour following LCM administration, and 24-hour seizure free period following LCM. Additional secondary outcomes reported include average LCM loading and maintenance dosing, incidence of mechanical ventilation, and time to mechanical ventilation from LCM administration.

Results: Of 143 patients with a documented status epilepticus diagnosis code reviewed, 26 met inclusion criteria for this study. Among these patients, a majority were male with a median age of 60.5 years (IQR 53.5–67). Most patients required ICU admission (88.5%). Patients who were included had a past medical history of epilepsy (65.3%), stroke (30.8%), and alcohol/drug use (26.9%). Prior to hospitalization, 42.3% of patients were not on ASM; 38.5% were on levetiracetam monotherapy and 19.2% of patients were on multiple ASMs. Median time from admission to LCM administration was 156 minutes (IQR 149–165) and seizure cessation occurred at a median of 172 minutes (IQR 163–187) post-administration. LCM was effective in achieving seizure cessation within six hours without additional ASM in 19.2% of patients and served as the final ASM in 26.9% of cases. Across Emory Healthcare institutions, LCM was most frequently used as the second ASM for status epilepticus treatment (35%). A shorter time to LCM administration appeared to correlate with faster seizure cessation but did not impact the incidence of mechanical ventilation.

Conclusions: LCM was identified as the final ASM administered in 26.9% of patients in this study, highlighting its potential role as a terminating agent for SE. However, this percentage is lower than findings from other studies which report intravenous LCM as the last ASM administered before seizure termination in 44% or more of cases. Additionally, LCM was most frequently used as the second ASM after benzodiazepines or levetiracetam for SE management across Emory Healthcare institutions. This trend may reflect an increasing recognition of LCM's utility earlier in the SE treatment algorithm, particularly in situations where other ASMs may be contraindicated or less accessible. Furthermore, shorter time to LCM administration appeared to correlate with faster seizure cessation, suggesting the importance of early intervention. However, this correlation did not extend to the incidence of mechanical ventilation, indicating that other factors besides seizure cessation may influence this outcome.

global: Y

2:30pm – 2:45pm | **Evaluation of Impact of Urinalysis Reflex to Culture Criteria Implementation** Athena A

Moderators: Rina Nath
Presenters: Morgan Vincent
Evaluators: Karen Babb

Title: Evaluation of Impact of Urinalysis Reflex to Culture Criteria Implementation

Authors: Morgan Vincent, Courtney Jackson, Emily Sinclair, Jeremy Frens, Cynthia Snider, Jeffrey Hatcher, Trung Vu, John Rizzo, Mike Boyer, Danielle Mahaffey, Andre Harvin

Background/Purpose: Urinary tract infections (UTIs) are among the most common bacterial infections in both inpatient and outpatient settings, representing a significant burden on healthcare systems. Effective diagnosis and management of UTIs is imperative to improve patient outcomes. Although urinary symptoms are the mainstay of diagnosing UTIs, a urinalysis is often used as a supporting diagnostic tool. However, contamination, recent antibiotic use, and other acute illnesses can impact urinalysis and can be misleading, resulting in false-positives or false-negatives. Often, urine cultures are ordered despite the recognition of these drawbacks or lack of urinary symptoms, leading to unnecessary antibiotic prescribing. A recent cohort study conducted by Petty et al 2020 found that in 2,461 patients diagnosed with asymptomatic bacteriuria, 74.4% of patients received antibiotics and 80% of patients had urine cultures ordered. Previous literature also suggests urinalyses with WBC >5/hpf plus positive nitrites have a positive predictive value of 98% for positive culture. Additionally, the implementation of urinalysis reflex criteria reduces rates of urine culturing relative to control sites without increasing the rate of gram-negative blood stream infections. This project aims to analyze the effect of implementing reflex to urine culture criteria to reduce rates of unnecessary urine culturing in a community teaching hospital.

Methodology: This multicenter, IRB-approved pre-post quality improvement study evaluated the impact of implementing conditional urinalysis reflex to culture criteria in an acute care setting. The reflex to culture was automatically cancelled if the urinalysis showed WBC <10/hpf or squamous epithelial cells >5/hpf. Patients were included if they had a urinalysis with urine culture ordered within the pre-intervention period November to December 2023 or a reflex order in the post-intervention period November to December 2024. Exclusion criteria were age less than 18, pregnancy, neutropenia (WBC <1.5 K/µL or ANC <1000/µL) or indwelling urinary catheter for greater than 5 days. The primary outcome was proportion of urine cultures meeting reflex criteria. Secondary outcomes included days of ceftriaxone therapy, number of total urine cultures for cost-savings analysis, number of urine cultures ordered outside the reflex order, and number of patients with gram-negative bacteremia. A subgroup analysis of reflex orders by site (Emergency Department and Inpatient) pre-intervention and post-intervention was also conducted. The primary outcome was assessed via Chi-square analysis and secondary outcome were assessed with Wilcoxon rank sum or descriptive statistics.

Results: A significant difference was found in all cultures that met reflex criteria in the pre- and post-intervention groups, with 53% of cultures meeting reflex criteria in the post-intervention group compared to 28% in the pre-intervention group ($p<0.001$). There was no difference between the pre- and post-intervention groups in overall cost savings, total number of ceftriaxone days (4969 vs 5613, $p = 0.06$), or in total incidence of gram-negative bacteremia (153 vs 156, $p = 0.68$). Sixty eight percent (3901/4517) of the total cultures post-intervention were ordered outside of the reflex order. In a subgroup analysis of reflex orders by location, the post intervention group had significantly more cultures that met reflex criteria than the pre-intervention group in either the Emergency Department or Inpatient locations.

Conclusions: Implementation of a reflex to urine culture criteria significantly improved the overall quality of urine cultures collected but did not cause a difference in cost savings, total number of ceftriaxone days, or incidence of gram-negative bacteremia.

Presentation Objective: Evaluate the Impact of Urinalysis Reflex to Culture Criteria Implementation at a Community Teaching Hospital
Self Assessment Question: True/False: A urinalysis is considered positive if it contains >10 WBCs /hpf and <5

SQCs/hpf.

global: Y

2:30pm – 2:45pm L **CHRONIC OPIOID USE POST ICU EXPOSURE IN OPIOID NAIVE PATIENTS** Parthenon 1

Moderators: Hania Joudeh
Presenters: Hillary Anne Reeves
Evaluators: Jennifer Adema

Title: Chronic Opioid Use Post ICU Exposure in Opioid Naive Patients

Authors: Hillary Anne Reeves, PharmD; Caitlin Thomas, PharmD, BCCCP

Objective: To assess the prevalence of opioid prescribing and post-discharge opioid use in opioid-naive ICU patients who received scheduled opioids during invasive mechanical ventilation (IMV) weaning. This study aims to identify risk factors for prolonged opioid use and guide opioid stewardship interventions.

Self-Assessment Question: Which of the following best describes a concern associated with the use of opioids for weaning patients from IMV?

1. Opioids used during weaning are often underdosed, leading to withdrawal symptoms.

2. Opioid use during weaning may predispose previously opioid-naïve patients to new prescriptions at discharge and long-term use.

3. Use of opioids during IMV can lead to inadequate sedation and poor weaning outcomes.

4. Opioids are no longer recommended for use in ICU settings due to high misuse rates.

Background: Opioid prescribing in hospitalized patients, particularly those in intensive care units (ICUs), is an area of growing concern due to its potential impact on long-term opioid use. While opioids are commonly used to facilitate weaning from IMV by providing sedation and analgesia, there is limited understanding of their role in continued opioid use after discharge, especially in opioid-naive patients. This study aims to evaluate the practice patterns of opioid prescribing and post-discharge opioid use during IMV weaning. The findings from this study may help guide opioid stewardship efforts and inform strategies for optimizing pain management while minimizing opioid exposure in critically ill patients.

Methods: This is a single-center, retrospective cohort study that has been deemed a quality improvement project and exempt from IRB approval. The study evaluated opioid prescribing patterns in opioid-naive ICU patients who received scheduled opioids during IMV weaning at a large, tertiary level, community teaching hospital. The electronic medical record (EMR) and Prescription Drug Monitoring Program (PDMP) will be used to evaluate opioid prescribing patterns at discharge and outpatient use. Patients ≥ 18 years old admitted to the ICU, mechanically ventilated for ≥ 3 days, and receiving scheduled opioids during IMV weaning will be included. Patients are excluded if they have a documented history of chronic opioid use or opioid use disorder prior to ICU admission, patients discharged to hospice or palliative care, major surgery at any point during admission, or incomplete medical records that do not provide sufficient data for analysis. EMR data from January 2023 - December 2023 will assess opioid initiation in the ICU, with PDMP review for up to 1-year post-discharge to evaluate outpatient opioid use. This study will compare patients who received scheduled opioids during IMV weaning to those who did not, identifying factors associated with outpatient prescribing and long-term opioid use.

Results: A total of 531 patients were screened, resulting in 58 patients who met inclusion criteria. Of these, 47 patients comprised the comparator group (no scheduled opioids during weaning), while 11 patients made up the study group (received scheduled opioids during weaning). The primary outcome showed no statistically significant difference (p=1.00) in the number of patients discharged with an opioid prescription between the two groups. Six patients in the comparator group were discharged with an opioid prescription, compared to one patient in the study group.

Conclusions: This study explored the relationship between scheduled opioid administration during invasive mechanical ventilation (IMV) weaning and subsequent outpatient opioid prescribing in opioid-naïve ICU patients. Although the study was underpowered, the results did not show a significant increase in discharge opioid prescribing among patients who received scheduled opioids during IMV weaning compared to those who did not. These findings suggest that current prescribing practices at our institution may reflect appropriate tapering or discontinuation of opioids prior to discharge, even among patients exposed to scheduled opioids during their ICU stay.

global: Y

2:30pm – 2:45pm L **Real world analysis of safety and efficacy outcomes in lymphoma patients receiving CAR T-cell therapy with prophylactic dexamethasone** Parthenon 2

Moderators: Deborah Hobbs
Presenters: Alleah Al-Amery
Evaluators: Nathanial Swanson

Title: Real world analysis of safety and efficacy outcomes in lymphoma patients receiving CAR T-cell therapy with prophylactic dexamethasone

Authors: Alleah Al-Amery, Karin Abernathy, Darby Siler, Laura Beth Parsons, and Chelsea Mitchell

Background: Axicabtagene ciloleucel (axi-cel) and brexucabtagene autoleucel (brexu-cel) are CD19-directed chimeric antigen receptor T-cell (CAR-T) therapies used to treat certain B-cell malignancies. Administration of CAR-T requires monitoring and management of potential adverse events, including cytokine release syndrome (CRS) and immune effector cell-associated neurotoxicity syndrome (ICANS). Prior studies have demonstrated a reduced incidence of CRS and ICANS with prophylactic dexamethasone in axi-cel recipients without compromising efficacy. Though brexu-cel shares a similar structure to axi-cel, there are no studies assessing effect of corticosteroid prophylaxis in this population. This study seeks to bridge the gap in the literature and assess institutional practice regarding prophylactic dexamethasone in both axi-cel and brexu-cel recipients.

Methods: This was a retrospective study at a tertiary medical center, including patients who received axi-cel or brexu-cel for a lymphoma diagnosis between June 1, 2020 and July 31, 2024. Patients were excluded if they did not receive prophylactic dexamethasone on days 0, +1, and +2, were enrolled in a clinical trial, received CAR-T as an inpatient, were under 18 years old, or were treated on the pediatric oncology service. The primary endpoint was incidence of all-grade CRS and ICANS, compared to a historical control. Secondary endpoints included time to onset, severity, duration, and resolution of CRS and ICANS, as well as hospitalization rates, disease response at Day 30, and survival at Day 30.

Results: Of the 32 patients screened, 27 (axi-cel: N=17 ; brexu-cel: N=10) were included. Baseline demographics were similar between both axi-cel and brexu-cel groups and the respective historical controls. The axi-cel group had similar rates of CRS compared with historical controls that also received prophylactic dexamethasone (88% vs. 80%; p=0.70). Overall incidence of ICANS was lower (35% vs 53%, p=0.16) than historical comparator. Similarly, Grade 3+ ICANS was lower than comparator group (5.8% vs. 12.5%, p=1.00). The brexu-cel group had a lower rate of CRS compared with historical controls that did not receive prophylactic dexamethasone (80% vs. 91%, p=0.27). Though not statistically significant, the brexu-cel group had lower incidence of Grade 3+ CRS compared with historical controls (0% vs. 15% p = 0.60). Incidence of ICANS was similar across brexu-cel groups (60% vs. 63%, p=1.00). However, Grade 3+ ICANS was lower in the brexu-cel group compared with historical controls (10% vs. 31%, p=0.66). Median days to onset of CRS and ICANS were delayed with the addition of prophylactic dexamethasone prior to brexu-cel (CRS: 7 vs. 2, p =0.06; ICANS: 10 vs. 7, p=0.70).

Conclusion: This real-world assessment of prophylactic dexamethasone with axi-cel showed comparable results to the historical studies. Prophylactic corticosteroids with brexu-cel appears to decrease severity of both CRS and ICANS while also delaying onset. These results could increase feasibility of outpatient administration of brexu-cel. These results also mirror outcomes with dexamethasone prophylaxis with axi-cel.

Disclosure: ***This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.***

global: Y

2:30pm – 2:45pm O **Safety and Efficacy of IV Fosaprepitant Versus IV Aprepitant** Olympia 2

Presenters: Ha Nguyen Trinh

Evaluators: Kelly Covert

SAFETY AND EFFICACY OF IV FOSAPREPITANT VERSUS IV APREPITANT Ha Nguyen Trinh, Sajia Kotwal, Karishma Patel Emory Decatur Hospital, Decatur, GA

Background/Purpose: Chemotherapy-induced nausea and vomiting (CINV) remains a common and distressing side effect that can have a negative impact on the quality of cancer patients' lives. Neurokinin-1 receptor antagonists (NK1RAs) effectively prevent CINV for moderate to high emetogenic chemotherapy regimens. The two most common NK1RAs are aprepitant and fosaprepitant. While IV fosaprepitant has been shown to be non-inferior to aprepitant, it is associated with a higher incidence of infusion-related adverse reactions (IRARs), compared to IV aprepitant. This occurs because IV fosaprepitant contains polysorbate 80, a surfactant known to increase the risk of hypersensitivity and IRARs. Both agents have been used for CINV prevention; however, IV fosaprepitant has recently become the preferred formulary NK1RA at our institution. This research project aimed to compare the safety and efficacy of IV fosaprepitant and IV aprepitant in patients who received chemotherapy inpatient and at the outpatient infusion center at Emory Decatur Hospital (EDH).

Methods: This study was a single-center, retrospective analysis of 86 patients aged 18 years or older who received either IV fosaprepitant or IV aprepitant as part of the antiemetic regimen for CINV at EDH between October 2022 and August 2024. Patients who were intolerant to either agent, received either agent for indications other than CINV or received oral aprepitant were excluded. The primary outcome was the incidence of IRARs, characterized by injection site pain, swelling, erythema, phlebitis, thrombophlebitis, and hypersensitivity (e.g., hypotension or hypertension, dyspnea, bronchospasm, edema, blisters, rash, flushing, chills or fever). Secondary outcomes included CINV complete response (CR) rates in the acute phase (defined as the absence of vomiting and use of rescue medications within 24 hours), number of vomiting episodes, use of rescue medications for breakthrough emesis, incidence of discontinuation and the incidence of switching from one NK1RA to another NK1RA. Descriptive statistics were used to summarize baseline characteristics, primary and secondary outcomes. Continuous variables were reported as means +/- standard deviation or median with interquartile ranges, while categorical variables were expressed as frequencies and percentages. Primary and secondary outcomes were compared using odds ratio (OR), 95% confidence interval (CI), and p-value of 0.05.

Results: For the primary outcome, there were no incidences of infusion reactions in the IV aprepitant group but there were 5 (11.4%) incidences of infusion reactions in the IV fosaprepitant group (p = 0.025, OR = 11, 95% CI [0.6 - 205]). There was no significant difference in CINV CR rates between the two groups (p = 0.64, OR = 1.8, 95% CI [0.1 - 2.4]). No patients reported experiencing vomiting episodes. Both groups had low and similar incidences of the use of rescue medications or breakthrough nausea (p = 0.62, OR = 0.71, 95% CI [0.2 - 3.4]). There were 5 incidences of discontinuation or switching from fosaprepitant to aprepitant (p = 0.025, OR = 11, 95% CI [0.6 - 205]).

Conclusions: Both IV fosaprepitant and IV aprepitant were effective in CINV prevention. However, IV fosaprepitant was associated with a higher incidence of infusion-related adverse reactions.

global: Y

2:30pm – 2:45pm 1 **Incidence of oral candidiasis post kidney transplant in patients with or without oral nystatin prophylaxis** Athena J

Moderators: Abigayle Campbell
Presenters: Hannah Green
Evaluators: Hannah Schmoock

Title: Incidence of oral candidiasis post kidney transplant in patients with or without oral nystatin prophylaxis
Authors: Hannah Green, Alexandra Pyatt, Lindsay Reulbach, Rachel Gustafson, Carlos Zayas, and Alex Ewing

Background: Renal transplant recipients (RTRs) are at increased risk for fungal infections, particularly oral candidiasis (OC), due to maintenance immunosuppression. The Kidney Disease: Improving Global Outcomes (KDIGO) guidelines recommend 1-3 months of fungal prophylaxis with oral fluconazole, clotrimazole troches, or nystatin suspension. However, the American Society of Transplantation does not endorse routine Candida prophylaxis. The necessity of fungal prophylaxis is questioned given the low incidence of OC, ease of treatment, and potential non-adherence to nystatin. The purpose of this study aimed to evaluate the incidence of OC within 60 days post-transplant in patients with and without 30-day nystatin prophylaxis.

Methods: A single-center, retrospective study was conducted at Prisma Health Greenville Memorial Hospital in patients 18 years or older who underwent a single renal transplant between July 2023 and January 2024 (with prophylaxis) and February 2024 to August 2024 (without prophylaxis). Exclusion criteria included concomitant use of systemic antifungals, antifungal use within 30 days prior to transplant, a history of OC, or a history of prior transplant or dual organ transplant. The primary outcome was the incidence of OC within the first 60 days post-transplant. Secondary outcomes included the occurrence of esophageal candidiasis (EC), systemic fungal infections, inpatient readmissions for OC, and the duration of OC treatment.

Results: A total of 173 transplant patients were screened and 132 were included in the final analysis with 64 in the without prophylaxis group and 68 in the prophylaxis group. At baseline, more patients in the prophylaxis group were on tacrolimus and mycophenolate maintenance regimens, had steroids withdrawn, and used fewer additional steroids. The incidence of OC was similar between groups, with two cases in each (2.9% vs. 3.1%, p=1.000), all of which were treatable. None of the secondary outcomes were statistically significant, though two cases of EC occurred in the prophylaxis group. Only one patient in the prophylaxis group required readmission for OC, and both OC cases in the without prophylaxis group involved additional steroid use.

Conclusions: The findings of this study demonstrate that the incidence of OC was low and, when it occurs, was easily treatable. There was no statistically or clinically significant difference in OC incidence between the prophylaxis and without prophylaxis groups, despite the latter group being more immunosuppressed. Given the comparable rates of OC between the two groups, nystatin prophylaxis does not appear to be warranted in this transplant population. Therefore, no modifications to current clinical practices are recommended.

global: Y

2:50pm – 3:05pm B **Impact of Pharmacist Intervention on Optimizing Guideline Directed Medication Therapy in High-Risk Patients with Diabetes** Athena C

Moderators: Cristy Patille
Presenters: Holly Johnson
Evaluators: Carrington Royals

Title: Impact of Pharmacist Intervention on Optimizing Guideline Directed Medication Therapy Prescribing of GLP-1 Agonists and/or SGLT2 Inhibitors in High-Risk Patients with Diabetes

Authors: Holly Johnson, Min Chul Kim, Amanda Stankowitz, Alexander Tunnell, TiShay Perry

Objective: To determine if targeted pharmacist interventions could effectively address identified barriers and optimize the prescribing of GDMT in this patient population.

Self-assessment Question: True or False**:** Targeted pharmacist interventions optimized the prescribing of GDMT in this patient population.

Background: The 2024 American Diabetes Association guidelines recommend glucagon-like peptide-1 receptor agonists (GLP-1RA) or sodium-glucose cotransporter-2 inhibitors (SGLT2i) as first-line agents for adult type 2 diabetic patients at high-risk of or with a history of atherosclerotic cardiovascular disease (ASCVD). Per these guidelines, high-risk for ASCVD is defined as those with end organ damage or multiple cardiovascular risk factors. A medication use evaluation was conducted from January 1st, 2024 to March 31st, 2024 at WT Anderson Community Health Center (WTACHC) and revealed that only 45% of high-risk type two diabetic patients were prescribed recommended guideline directed medication therapy (GDMT) of either a GLP-1 agonist or SGLT2i. Potential barriers to prescribing were identified. The purpose of this study was to determine if targeted pharmacist interventions could effectively address identified barriers and optimize the prescribing of GDMT in this patient population.

Methodology: For this single-centered, IRB-approved, prospective comparative study investigators assessed all adult type two diabetic patients seen at the WTACHC for ASCVD risk status. The pre-intervention cohort included patients from January 1st, 2024 to March 31st, 2024, and the post-intervention cohort included patients from October 1st, 2024 to December 31st, 2024. A daily list of targeted pharmacist interventions to initiate a GLP-1RA or SGLT2i for eligible patients was then generated and presented to physicians for review. The primary outcome of this study was the rate of appropriately prescribed GDMT of either a GLP-1RA or SGLT2i following provider education and pharmacist intervention. Secondary outcomes included the percent of patients with a documentation for not receiving GDMT, percent of patients without documentation but with a presumed reason for not receiving GDMT, and percent of pharmacist interventions accepted. Statisical analysis included independent chi-square tests.

Results: A total of 180 patients were included in the pre-intervention cohort and 266 in the post-intervention cohort. The primary outcome of the rate of appropriately prescribed GDMT in high-risk patients increased by 10% (95% CI, 0.59% to 19.41%, p=0.078), from 45% (95% CI, 37.7% to 52.3%) in the pre-intervention cohort to 55% (95% CI, 49% to 61%) in the post-intervention cohort. An 8% decrease was seen for the secondary outcome of patients with a documented reason for not receiving GDMT (95% CI, -3.84% to 19.84%, p=0.23), dropping from 34% (95% CI, 24.6% to 43.4%) in the pre-intervention cohort to 26% (95% CI, 18.7% to 33.3%) in the post-intervention cohort. However, there was a 1% increase in the percentage of patients without a documented reason but with a presumed appropriate reason for not receiving GDMT (95% CI -4.81% to 6.81%, p=0.96),

increasing from 5% (95% CI, 0.7% to 9.3%) in the pre-intervention cohort to 6% (95% CI, 2.1% to 9.9%) in the post-intervention cohort. Overall, 142 targeted pharmacist interventions were made, with an acceptance rate of only 14%.

Conclusions: The rate of appropriately prescribed GDMT did increase in the post intervention cohort but was not determined to be a statistically significant difference. Additionally, the interventions did not result in a significant increase in the percentage of patients with a documented reason for not receiving GDMT. Despite the educational efforts, there was a decrease seen in documentation for this population. There was also no significant change in the percentage of patients without a documented reason but with a presumed appropriate reason for not receiving GDMT, and most pharmacist interventions were not accepted. The lack of statistically significant results in this study may be attributed to the interventions being conducted on paper rather than in face-to-face interactions. Future studies could consider more personalized, individualized interventions to improve outcomes for each patient.

global: Y

2:50pm – 3:05pm B **Pillars of Care: Impact of a Heart Failure Pharmacist on Optimization of Guideline Directed Medical Therapy** Athena D

Moderators: Lisa Woolard
Presenters: Christopher Rogers
Evaluators: Taylor Wells

Title: Pillars of Care: Impact of a Heart Failure Pharmacist on Optimization of Guideline Directed Medical Therapy

Authors: Christopher J. Rogers, Lindsey Pitt, Laura Bullock, Muddassir Mehmood

Objective: Evaluate the impact clinical pharmacists have on titrating guideline directed medical therapy and their benefits to health systems.

Self Assessment Question: True of False: Heart failure pharmacists have a stastistically significant impact on up-titrating guideline directed medical therapy.

Background: Heart failure currently impacts 6.2 million adults in the United States. The national 30-day and 90-day composite heart failure hospitalizations and emergency department visits rates are 18.2% and 31.2% respectively. Studies such as CHAMP-HF, EVOLUTION-HF, and GUIDE-IT trials have highlighted barriers in up-titrating and fulling implementing heart failure guideline directed medical therapy (GDMT). These barriers include bradycardia, hypotension, and declining renal function. A simple GDMT score was created to account for medication titration and additional factors that affect fully implementing heart failure guideline directed medical therapy. The purpose of this study was to determine and assess the impact of a heart failure clinical pharmacist on guideline directed medical therapy.

Methods: This study was a single-center, retrospective, cohort, chart review that enrolled patients from January 2023 through August 2024. Patients were included in this study at least 18 years of age or older with a diagnosis of heart failure with reduced ejection fraction and completed at least one pharmacist-led titration visit within the study time frame. Patients were excluded if they were less than 18 years old or if they passed within the study time frame. The primary outcome was the change in the baseline GDMT score by at least one point 90-days after the first pharmacist-led GDMT titration visit. Secondary Endpoints included the change in the patient’s baseline GDMT score 120-days after the titration visit, combined 30-day and 90-day heart failure related hospitalizations and emergency department visits, and the revenue generated for the health system by pharmacist billing. The primary outcome was analyzed via the Chi-Square Goodness-of Fit analysis. All secondary outcomes were analyzed using descriptive statistics.

Results: A total of n=100 patients were included in this study. The average patient was a Caucasian, male, with Medicare insurance, and NYHA class II symptoms at the time of the pharmacist-led titration visit. Common comorbid disease states included atrial fibrillation (43%), cardiomyopathy (60%), coronary artery disease (46%), and hypertension (55%). For the primary endpoint, 10 patients were expected to have a GDMT score increase, and 90 patients were expected to not have a GDMT score increase. 45 patients were observed to have a GDMT score increase while 55 patients were observed to not have a GDMT score increase (Chi-Square 136.11 $p<0.001$). At 120-days post titration visit, 7% patient’s scores increased, 71%patient’s scores remained the same, 3% of patients declined titrations, 11% of patients were lost to follow-up, and 7% of patients had scores decrease. 10% of patients were readmitted to the hospital or visited an emergency department for heart failure related causes within 30-days of the pharmacist-led titration visit. 11% of patients were hospitalized for heart

failure and 14% of patients visited an emergency department within 90-days of the pharmacist-led titration visit. The total revenue generated for the health system by billing 99211 was $893.88.

Conclusion: Pharmacist-led GDMT titration visits had a statistically significant impact on increasing patient's heart failure GDMT scores within our institution. This study also saw lower 30-day and 90-day rates for hospitalizations and emergency department visits for heart failure. While unable to completely justify a full pharmacist's salary in the outpatient setting, our study demonstrated the ability for pharmacists to generate revenue for our health system.

global: Y

2:50pm – 3:05pm Y **Evaluating the Access Process for Patients Transitioning from Intravenous to Subcutaneous Biologic Administration for Inflammatory Bowel Disease** Athena B

Moderators: Nathan Wayne
Presenters: Taylor Kissel
Evaluators: Krista Riche

TITLE: Evaluating the Access Process for Patients Transitioning from Intravenous to Subcutaneous Biologic Administration for Inflammatory Bowel Disease

AUTHORS: Taylor Kissel, Miranda Kozlicki, Bridget Lynch, Josh DeClercq, Autumn Zuckerman

OBJECTIVE: Evaluate the medication access process and outcomes for patients with IBD referred to transition to or initiate SC vedolizumab or infliximab.

SELF ASSESSMENT QUESTION: What is the most common method of approval for patients approved to start subcutaneous vedolizumab or infliximab? A. Benefits investigation only B. PA approval only C. 1st level appeal D. 2nd level appeal

BACKGROUND: The U.S. Food and Drug Administration (FDA) recently approved vedolizumab and infliximab for subcutaneous (SC) administration, providing patients with Inflammatory Bowel Disease (IBD) [Crohn's Disease (CD) and Ulcerative Colitis (UC)] a convenient option to administer medication at home instead of clinic-administered intravenous (IV) infusions. SC formulations are most often covered on pharmacy insurance unlike infusions which are typically covered through medical insurance. Research is needed to evaluate the uptake and challenges associated with vedolizumab and infliximab SC formulations.

METHODS: A single center, ambispective study evaluated patients with IBD with a referral to start or transition to SC vedolizumab or infliximab between September 1, 2023 and December 31, 2024. Patients were excluded if they were prescribed SC vedolizumab or infliximab from a non-Vanderbilt University Medical Center provider, lost to follow-up, or were not referred to Vanderbilt Specialty Pharmacy (VSP). Patients who used a manufacturer quickstart program or whose medication access was still ongoing as of February 18, 2025, were excluded from regression analyses. The primary outcome was time to SC formulation access. Secondary outcomes included whether patients were approved for SC therapy, method of approval for SC formulation, and number of patients not starting SC maintenance therapy after referral. Time to SC formulation access was calculated from the medication access process start date to the medication approval date, either through insurance or manufacturer. Multivariable regression analyses evaluated whether patients were approved to start SC (logistic regression) and time to approval for SC formulation (proportional odds [PO] logistic regression). Covariates of interest included: referral time (from FDA approval date of SC formulation), insurance type, remission status, referral medication, and IV status.

RESULTS: Of the 274 patients referred for SC vedolizumab or infliximab, 262 were included in the study. Exclusions were for the following reasons: 1 referred by non-VUMC provider, 2 lost to follow-up, and 9 never referred to VSP. Median age was 44 years (Interquartile range [IQR] 34 – 56); approximately half (55%) were female. Most patients were White (89%) and with commercial prescription insurance (84%). Diagnoses included CD (53%) and UC (47%) with a median disease duration of 14 years (IQR 7 – 23). Most referrals were for vedolizumab (81%), and most patients were established on IV therapy (81%). There were 32 patients still in progress or who used a manufacturer quickstart program. Of the remaining 230, most patients (n = 166, 72%) referred to SC were approved, with over half of those approvals occurring via PA (56%). Of the 166 patients approved to start therapy, 21% of patients did not start therapy (n=34/166), largely due to patient decision (47%, n =16/34). The median time to access was 10.5 days (IQR 1 – 42) with a range of 0 to 340 days. Patients with commercial pharmacy insurance were 3.4 times more likely to have a longer approval time (Odds ratio [OR]: 3.4, 95% confidence interval [CI]: 1.6 - 7.3, p = 0.001). Patients in remission at baseline and those with an infliximab referral were more likely to be approved (OR: 2.3, 95% CI: 1.04 - 5.1, p=0.041 and OR: 3.3, 95% CI 1.04 - 10.2, p=0.043). Patients with commercial pharmacy insurance were 80% less likely to be approved (OR: 0.2, 95% CI:

0.1 - 0.7, p=0.012).

CONCLUSIONS: Strict insurance formulary requirements, particularly in patients with commercial insurance, resulted in lengthy approval times for many patients and prevented a quarter of patients from being approved. Future studies should evaluate clinical and humanistic benefit of SC formulations.

global: Y

2:50pm – 3:05pm R **Tenecteplase vs Alteplase for the Treatment of Acute Ischemic Stroke Across A Healthcare System** Athena G

Moderators: April Quidley
Presenters: Raja Munthe
Evaluators: Christina Thurber

Authors: Raja Munthe, Lisa Sagardia Shapiro, Raphaelle Lombardo, Fadi Nahab, Deborah Westover

Objective: To assess the door-to-needle times (DTN) of patients who meet eligibility criteria for thrombolytic administration prior to and post implementation of the use of tenecteplase in ischemic strokes.

Self Assessment Question: What is the recommended door-to-needle times for patients with an acute ischemic stroke receiving a thrombolytic?

Background: Acute ischemic strokes (AIS) is commonly treated with thrombolytics like Alteplase (ALT) and Tenecteplase (TNK). ALT has a long history of research supportive improved outcomes, but TNK, with advantages such as longer half-life, higher fibrin specificity, and simpler admnistration as a single bolus, is emerging as a promising alternative. While previous studies show comparable safety and effiacy between TNK and ALT, including similar rates of mortality and adverse events, TNK's favorable pharmacokinetic profile & administration technique may improve key time intervals like door-to-needle (DTN) and door-to- puncture (DTP). Not all studies have shown uniform improvements, nor have they looked at the impact of TNK implementation across types of stroke centers. With TNK now the preferred thrombolytic within Emory Healthcare, as of April 2024, this study aims to evaluate TNK's impact on stroke care process times, outcomes, and potential obstacles to implementation.

Methods: This is a multicenter retrospective, observational cohort study of consecutive patients selected from Emory's Stroke Get-With-The-Guidelines Registry, which includes all patients who were suspected of having a stroke, between October 2023 to October 2024. Patients who were 18 years or older, suspected of ischemic stroke, and received thrombolytic therapy with either ALT or TNK within an Emory healthcare facility were included. Patients who were pregnant or received thrombolytics while already admitted inpatient were excluded from the study. The primary endpoint studied was DTN. Secondary outcomes included DTP times, door-in-door-out (DIDO) times, rates of serious adverse effects, such as serious bleeding events or hypersensitivity reactions (e.g. angioedema); hospital length of stay (LOS) and successful thrombectomy defined as TICI scores 2B or greater. DTN and DIDO times, rates of serious adverse events, and hospital LOS were analyzed with Mann-Whitney U tests.Categorical data will be analyzed using a Chi-square test with quantity-limited variables assessed using Fisher's exact tests.

Results: Of 3,511 patients recorded in Emory's Stroke Get-With-the-Guidelines registry during the study period, 188 (5.2%) received thrombolytics, and 154 patients that met inclusion criteria were included in the study. Our results showed no significant difference in DTN times (56 vs. 53 minutes, p = 0.14), DIDO times (106 vs. 121 minutes, p = 0.45), DTP times (123 vs 104 minutes, p = 0.51) or serious adverse bleeding effects (p = 0.11, OR 1.1 [95% CI 0.4,3.2]) between the pre- and post-implementation cohorts. DTN times did not differ significant based on stroke center classification (p = 0.07) or between thrombolytics at each site and type of stroke center. Hospital LOS and rate of successful thrombectomy were also not significantly different.

Conclusion: There was no statistically significant difference in DTN or DIDO times between cohorts treated with ALT or TNK. These results suggest that the change in thrombolytics did not make significant impact on our ability to promptly administer thrombolytics or transfer patients to thrombectomy-capable centers. Additionally, there were no significant differences in serious adverse effects between cohorts suggesting similar safety profiles between ALT and TNK. Due to the lack of significant difference in stroke response, outcomes, or rate of serious adverse events, transitioning from ALT to TNK should focus on the ease of administration.

2:50pm – 3:05pm R **The Variance of Distribution of Fluid Bolus in Patients Diagnosed with Sepsis and Septic Shock within the St. Joseph/Candler Health System** Athena H

Moderators: John Carr

Presenters: Saralyn Hardin

Evaluators: Kelly Rumbaugh

TITLE: The Variance of Distribution of Fluid Bolus in Patients Diagnosed with Sepsis and Septic Shock within the St. Joseph/Candler Health System

AUTHORS: Saralyn Hardin, Stephen McCall, Caitlyn Johnson

OBJECTIVE: To determine the St. Joseph/Candler Health System's variation of distribution of fluid bolus volume given within three hours after sepsis or septic shock diagnosis from the standard of care (30mL/kg).

BACKGROUND: Currently the Surviving Sepsis guidelines recommend prompt fluid resuscitation with 30 milliliters per kilogram of crystalloid fluids within the first three hours of care for patients who are either hypotensive or have a lactate level > 4mmol in the absence of randomized control trials to support this recommendation. To our knowledge, there are no trials that include distribution of fluid volumes or categorical incidences manifested from fluid overload such as renal replacement therapy or diuretic administration beyond 72 hours in varying fluid bolus volumes.

METHODS: This was a retrospective, single-centered, observational, chart review of patients who have been admitted to St. Joseph's or Candler Hospitals and diagnosed with sepsis or septic shock at the time of admission the fluid volume was evaluated with respect to patient ideal body weight in order to determine a health system distribution and variance from guideline recommended resuscitation of 30 mL/kg. Patients were further differentiated into groups based on variance from mean fluid bolus volume using standard Gaussian distribution. Using the health system's software and a computer-generated list using MedMined™ services to identify patients with this diagnosis between April 1, 2023 and April 1, 2024, patients were reviewed for inclusion in the study.

RESULTS: Three hundred fifty patients were screened for eligibility with a total n=107. The average fluid bolus administered within three hours was found to be 1819.7 milliliters resulting in 29.3 milliliters per kilogram of ideal body weight with the average ideal body weight being 63.4 kilograms. Of the one hundred and seven patients there past medical history's revealed 18 (17%) congestive heart failure, 21 (21%) chronic kidney disease, 67 (63%) hypertension and 48 (45%) diabetes mellitus. Four of the one hundred and seven patients included experienced an acute heart failure event during hospitalization with one having a past medical history of congestive heart failure. New renal replacement therapy was initiated in three of the one hundred and seven patients with only one patient having a past medical history of chronic kidney disease. There were 19 (18%) of the hundred and seven patients that required new diuretic use during hospitalization. Overall, there is a potential correlation between patients having a past medical history significant for congestive heart failure and fluid bolus given to adverse events.

CONCLUSION: The overall fluid volume administered to patients during initial fluid resuscitation was comparable close to the guideline's recommendations with all cause mortality of only eleven percent. However, there were comparable correlations between the total amount of fluid received and adverse events experienced by patients. Considering the study's limitations of small sample size, further research with larger, multicenter data should explore potential relationship between fluid bolus given after sepsis or septic shock diagnosis to adverse events.

global: Y

2:50pm – 3:05pm | **Differences in Duration of Treatment for Extended-Spectrum Beta-Lactamase (ESBL) Infections** Athena A

Moderators: Rina Nath

Presenters: Natalee Chornak

Evaluators: Karen Babb

Title: Differences in Duration of Treatment for Extended-Spectrum Beta-Lactamase (ESBL) Infections

Authors: Natalee Chornak, Jen Tharp, Cameron Lanier, Edward Grace, David Cluck

Objective: Assess for differences in duration of treatment of ESBL infections from a urinary source

Self Assessment Question: In Progress

Background: **With nearly 3 million cases of antimicrobial resistant infections in the United States per year, antimicrobial resistance has and continues to be a major public health threat, both nation and worldwide. Current Infectious Disease Society of America (IDSA) guidelines do not recommend different treatment durations for infections based on phenotypic resistance. The purpose of this study is to compare treatment of ESBL and non-ESBL infections from a urinary source and assess differences in treatment duration.**

Methods: This study is a retrospective cohort study being conducted within 18 Ballad Health facilities between June 1, 2021 – June 30, 2024. Inclusion criteria consist of patients who are 18 years old or greater who had positive urine cultures for Escherichia coli or Klebsiella pneumoniae and received inpatient antibiotics for at least 24 hours. Exclusion criteria include patients who are pregnant, incarcerated, require use of a catheter, have urological abnormalities, conditions with inadequate source control, have a polymicrobial infection, have an indication for prolonged antibiotic treatment independent of current infection, or require Intensive Care Unit (ICU) level of care. Patients will be divided into two cohorts; those with urinary tract infection (UTI) only and those with bacteremia from a urinary source. The primary endpoint is a difference in duration of treatment of ESBL and non-ESBL organisms from a urinary source. Secondary endpoints include duration of antibiotic use, duration of treatment without a susceptible agent, hospital length of stay, readmission within 90-days, re-infection by the same organism within 90-days, and incidence of Infectious Disease consults placed.

Results: In Progress

Conclusion: In Progress

global: Y

2:50pm – 3:05pm L **Determining the Therapeutic Dosage of Enoxaparin Anticoagulation Among Morbidly Obese Patients After the Implementation of an Automatic Clinical Pharmacy Anti-Xa Monitoring Service Using Enoxaparin Dosing Protocol** Parthenon 2

Moderators: Deborah Hobbs

Presenters: Kelsey Green

Evaluators: Nathanial Swanson

Title: Determining the Therapeutic Dosage of Enoxaparin Anticoagulation Among Morbidly Obese Patients After the Implementation of an Automatic Clinical Pharmacy Anti-Xa Monitoring Service Using Enoxaparin Dosing Protocol

Authors: Kelsey Green, Michael Ezebuenyi, Jennifer Jones, Danielle Ricks, and Gregg Davis

Objective: The purpose of this study is to determine the required dose of enoxaparin in mg/kg to attain therapeutic anti-Xa levels in morbidly obese patients.

Background: Enoxaparin is a low-molecular weight heparin (LMWH) used for prophylaxis and treatment of venous thromboembolism (VTE), acute coronary syndromes (ACS) and stroke prevention in atrial fibrillation. Most patients receiving LMWH do not need laboratory monitoring. However, monitoring anti-Xa levels in patients with morbid obesity is recommended due to variations in pharmacokinetic parameters which affect drug concentrations. Currently, there is no standardized dosing regimen for the morbidly obese patient population.

Methods: This study is a single-center retrospective electronic chart review conducted from August 2021 to August 2024. This study has been approved by the Institutional Review Board at Our Lady of the Lake Regional Medical Center (OLORMC). The electronic medical record was used to identify eligible patients, which include adults with a BMI greater than or equal to 35 kilograms per square meter or total body weight greater than or equal to 150 kilograms who are initiated on treatment dosing of enoxaparin. OLOLRMC employs an automatic consult for a clinical pharmacist-driven anti-Xa protocol, which was implemented in 2019, for monitoring and adjusting enoxaparin doses for morbidly obese patients. Data was collected on the initial enoxaparin dose, initial anti-Xa levels, enoxaparin dose at goal anti-Xa level, the time (in days) to reach therapeutic anti-Xa level, length of hospitalization and the occurrence of adverse bleeding events. Descriptive statistics along with other relevant statistical tests, such as regression and correlation, will be utilized in the analysis of collected data. The primary outcome of the study is the required enoxaparin dose in mg/kg to attain two therapeutic anti-Xa levels. Subgroup analyses are planned to compare the doses of enoxaparin across BMI ranges, renal function, and different indications.

Results: Overall, the enoxaparin dose at time of second consecutive therapeutic anti-Xa level was found to be 0.77 mg/kg (IQR 0.60, 0.84). The median time to attain two consecutive therapeutic anti-Xa levels was 154 hours (IQR 76, 221). Out of the patients weighing greater than or equal to 155 kg who had initial doses capped at 150 mg, had lower rates of supratherapeutic levels and improved time to two consecutive anti-Xa levels. In addition, one limitation of our study was 20% of anti-Xa levels were unable to be assessed due to being drawn outside of the peak window.

Conclusion: In conclusion, lower initial enoxaparin doses of ~0.75 mg/kg and appropriate drawing times of anti-Xa levels would improve the ability and time to reach therapeutic anti-Xa levels in morbidly obese patients.

global: Y

2:50pm – 3:05pm L **Pharmacist Driven Penicillin Allergy De-escalation using the PEN-FAST Allergy Decision Rule**

Moderators: Hania Joudeh Parthenon 1

Presenters: Ny'Asia Cleckley

Evaluators: Jennifer Adema

Title: **Pharmacist Driven Penicillin Allergy De-escalation using the PEN-FAST Allergy Decision Rule**

Authors: Ny'Asia Cleckley, Molly Thompson, Jessica Sutton

Background:

β-lactam allergies, specifically allergies to penicillin, are the most commonly reported antibiotic medication allergies in the hospital setting. However, according to the American Academy of Asthma, Allergy, and Immunology (AAAAI) Joint Task Force, 90% of patients with a reported penicillin allergy are able to tolerate the penicillin drug class.

The PEN-FAST penicillin allergy assessment is a clinical decision-making tool designed to be a quick and low burden method to identify patients with low-risk penicillin allergies who would likely have a negative result if formal penicillin allergy testing was conducted. The mnemonic PEN-FAST describes the risk score of true penicillin allergy based on the following queries: five years or fewer since the reaction (2 points), anaphylaxis/angioedema or severe cutaneous adverse reaction (SCAR) (2 points), and treatment required for the reaction (1 point). Trubiano et al (2020) validated the PEN-FAST assessment with results showing it to have a high negative predictive value of 96.3% in scores less than 3 points, coinciding with the cutoff for low risk penicillin allergies.

Methods: A single-center, retrospective, cohort analysis conducted on adult (>18 years old) patients with a documented penicillin allergy admitted to Trident Medical Center from February 2025 to April 2025. The study is pending exempt review by the health system's Institutional Review Board. Eligible patients included non-pregnant adults with a penicillin allergy documented in electronic medical record (EMR) who were screened during an admission within the defined timeframe using the PEN-FAST assessment. Patients were excluded from the study if there was a documented allergic reaction of anaphylaxis (throat/mouth swelling, trouble breathing) or SCAR to penicillin in the EMR or were unable/unwilling to participate in the interview. The primary outcome of this study is the incidence of patients with a PEN-FAST score less than 3 points correlating with low risk of true penicillin allergy. Secondary outcomes include penicillin allergy de-labeling, post-screening oral amoxicillin challenge, antibiotic selection, antibiotic-associated adverse events and the time required for patient interview. The patients' electronic medical record will be used to collect data on patient demographics, PEN-FAST screening result, antibiotic selection, antibiotic-associated adverse events and use of a post-documentation amoxicillin oral challenge.

Results: In progress

Conclusion: In progress

global: Y

2:50pm – 3:05pm N **Evaluating for racial disparities in intravenous fibrinolytic door-to-needle times at a comprehensive stroke center** Athena I

Moderators: Elly Glazier
Presenters: Morgan Daniel
Evaluators: Devon Burhoe

Title: **Evaluating for racial disparities in intravenous fibrinolytic door-to-needle times at a comprehensive stroke center**

Authors: Morgan Daniel, Ashly Lamosek, Olivia Morgan, Katleen Chester

Objective: The purpose of this study was to identify the effect of racial disparities on fibrinolytic door-to-needle (DTN) times.

Self Assessment Question: What factor contributed to the initial racial disparity observed in DTN times for fibrinolytic administration in acute ischemic stroke treatment?

Background: The phrase “time is brain” is a staple in the world of acute ischemic stroke (AIS) as it reflects on the importance of efficient and timely care for patients to preserve neurons and limit the degree of ischemia. In the stroke setting, barriers and negative outcomes are more prevalent in black patients than white patients. Data has shown that non-white patients experiencing signs and symptoms of AIS were less likely to be treated with fibrinolytics, likely due to delay in presentation and not meeting eligibility criteria for administration. Despite this information, there is limited evidence on the relationship between race and fibrinolytic DTN times as most of the literature is focused mainly on the tele-stroke setting or outcomes in mechanical thrombectomies. The patient population that will be evaluated is unique compared to other literature as these patients are presenting to a safety net comprehensive stroke center located in the heart of what is known as the country's stroke belt.

Methods: This was a single-center, retrospective chart review evaluating patients presenting directly to the Grady Memorial Hospital Emergency Care Center receiving intravenous fibrinolytics (alteplase and tenecteplase) for AIS from January 2018 to May 2024. Patients who received intravenous fibrinolytics via the Mobile Stroke Unit or after hospital admission, were excluded from this study. Data was obtained from the Institutional Stroke Committee fibrinolytic data reports, which are updated monthly. The primary outcome was mean DTN time, between whites versus non-white patients. Secondary outcomes included the percentage of patients who met within 30-, 45-, and 60-minute DTN time goals, means of arrival, presentation time to the Emergency Department (00:01 – 08:00, 08:01 – 16:00, 16:01 – 00:00), and time from last known well to fibrinolytic administration, between white versus non-white patients.

Results: A total of 893 patients treated with intravenous fibrinolytics were analyzed, including 652 non-white and 241 white patients. Non-white patients were significantly younger (median age 63 years [IQR 54–74] vs. 70 years [IQR 61–80], p = 0.025), with no significant difference in sex distribution (56.2% vs. 60.9%, p = 0.056). Median DTN times were longer for non-white patients (45 vs. 41 minutes, p = 0.014). Non-white patients more often required pre-treatment interventions for blood pressure or glucose control (21% vs. 12%, p = 0.003). When accounting for these interventions, DTN times were similar between groups (59 vs. 55 minutes, p = 0.147). A greater proportion of white patients met DTN time goals at 30, 45, and 60 minutes, though differences were not statistically significant (p = 0.139, p = 0.052, p = 0.108, respectively). Arrival methods and presentation times varied significantly. Non-white patients were

more likely to arrive by EMS (85.5% vs. 71.8%, p < 0.001) and less likely by air transport (3.7% vs. 24.9%, p < 0.001). They also presented more frequently between 00:01–08:00 (14.6% vs. 8.7%, p = 0.021). Time from last known well to fibrinolytic administration did not differ significantly between groups (140 vs. 144 minutes, p = 0.160).

Conclusion: Racial disparities in fibrinolytic DTN times were initially observed, but these differences were eliminated after accounting for the higher rates of pre-treatment blood pressure and glucose management in non-white patients. This highlights the need for public health initiatives that address disparities in hypertension and diabetes incidence and management in non-white communities. Further research is essential to promote equitable acute stroke care.

global: Y

2:50pm – 3:05pm

O **Evaluation of Antibiotic Allergies in Patients Who Underwent a Desensitization to Determine if a Desensitization Would Still Be Clinically Indicated Today** Olympia 2

Presenters: Sydney Hunt

Evaluators: Kelly Covert

Title: Evaluation of Antibiotic Allergies in Patients Who Underwent a Desensitization to Determine if a Desensitization Would Still Be Clinically Indicated Today

Authors: Sydney C. Hunt, Joanna L. Stollings, Elizabeth J. Phillips, and Cosby A. Stone, Jr

Background: The creation of antibiotic allergy risk stratification tools has called into question whether many of the previously performed antibiotic desensitizations would still be clinically indicated today. The purpose of this study was to evaluate how many of the desensitizations performed due to penicillin, cephalosporin, and trimethoprim-sulfamethoxazole allergies could have been avoided if current risk stratification tools were utilized.

Methods: A retrospective review was conducted to risk stratify the allergy labels of patients who underwent a penicillin, cephalosporin, or trimethoprim-sulfamethoxazole desensitization between January 1, 2016 to December 31, 2023 at a quaternary referral center. The primary outcome was the incidence of low-risk allergy labels based on validated risk stratification criteria. Secondary outcomes included desensitization success rate and possible cost avoidance had an oral challenge been performed instead of a desensitization for allergies meeting low-risk criteria.

Results: A total of 25 desensitizations were included: 13 (52%) for a penicillin, 6 (24%) for a cephalosporin, and 6 (24%) for trimethoprim-sulfamethoxazole. The most common desensitization antibiotics were penicillin G (n = 7, 28%) and trimethoprim-sulfamethoxazole (n = 6, 24%), and the most common desensitization indication was bacteremia (n = 7, 28%). Overall, 7 (28%) allergies were categorized as being low-risk. Out of the 25 desensitizations, 23 (92%) were successfully completed. An estimated $73,711.68 in healthcare spending could have been avoided had an oral challenge been performed instead of a desensitization in the patients identified to have low-risk allergies.

Conclusions: Nearly on-third of the antibiotic desensitizations could have been avoided had current allergy risk stratification tools been utilized, leading to decreased healthcare costs and possible allergy de-labeling.

global: Y

2:50pm – 3:05pm P **Evaluation of Pharmacist-Led Opioid Stewardship Efforts in a Community Hospital** Olympia 1

Presenters: Mia Passarelli, Mia Passarelli

Evaluators: Elizabeth Hudson, Jasmine Jones

Title: Evaluation of Pharmacist-Led Opioid Stewardship Efforts in a Community Hospital

Authors: Mia Passarelli, Amanda Herndon, Keith Johnson

Background/purpose: Acute pain is a primary driver of hospital admissions in the United States, with opioids remaining the most used analgesics for management. However, the rise in opioid prescribing and consumption has significantly contributed to the ongoing opioid crisis. To address these concerns, the Centers for Disease Control and Prevention guidelines highlight the need for responsible opioid prescribing to reduce associated risks. Research on pharmacist-led opioid stewardship programs has shown improvements in both the safe and effective opioid utilization. This study seeks to evaluate the impact of pharmacist-driven opioid stewardship interventions on pain management safety and efficacy within a community hospital setting.

Methodology: This study received Institutional Review Board exemption. Utilizing a quasi-experimental, retrospective, comparative design, this study evaluated opioid stewardship practices before and after the implementation of a pharmacist-led opioid stewardship protocol. Upon receiving opioid orders, pharmacists performed a comprehensive chart review to assess the need for medication-related interventions in accordance with a locally approved protocol. This review excluded orders for patients with chronic pain, cancer pain, those receiving palliative or hospice care, as well as cases involving acute postoperative pain and ischemic chest pain. This protocol served as a framework for selecting opioid analgesics and adjunctive therapies, ensuring a comprehensive approach to pain management. Pharmacists implemented a range of interventions, including converting intravenous opioids to oral formulations, adding analgesic orders for lower pain scales if omitted, prescribing naloxone for patients receiving more than 50 morphine milligram equivalents (MME) daily, and initiating bowel regimens for patients on scheduled opioid therapy. All pharmacist interventions were documented. The primary outcome was adherence to appropriate pain scale, defined as correspondence between the patient-reported pain scale and the administered medication's ordered pain scale. Secondary outcomes included the incidence of analgesic order panel utilization, the incidence of oral opioid administration, incidence of methylnaltrexone administered for opioid induced constipation, and naloxone administration rates following the administration of an opioid analgesic.

Results: A total of 2,878 patients were included, 1,419 in the pre-intervention group and 1,459 in the post-intervention group. For the primary outcome of incidence of adherence to appropriate pain scale, 77.9% of administrations were considered adherent in the pre-intervention group and 89.2% in the post-intervention group $p < 0.001$). Compared to the pre-intervention group, the incidence of analgesic order panel utilization was higher in the post-intervention group (25.5% vs. 38.2%; $p < 0.001$). The incidence of naloxone administration did not differ significantly between the pre- and post-intervention groups (0.21% vs. 0.14%; $p = 0.63$). Incidence of methylnaltrexone administered for opioid induced constipation occurred in 0.41% of the post-intervention group compared to 1.13% of the pre-intervention group ($p = 0.02$). Of all opioid administrations 60.01% were oral opioids in the post-intervention group compared to 63.27% in the pre-intervention group ($p < 0.001$).

Conclusions: The pharmacist-led opioid stewardship protocol significantly improved the adherence to appropriate pain scales and the utilization of available order panels. The protocol effectively implemented the initiation of bowel regimens, limiting the requirement for opioid induced constipation treatment.

global: Y

3:10pm – 3:25pm

A **Evaluation of an Automated Dispensing Cabinet Patient Medication Management Software's Impact on Medication Dispense Rates** Parthenon 2

Moderators: Deborah Hobbs
Presenters: Trey Carter
Evaluators: Nathanial Swanson

Title: Evaluation of an Automated Dispensing Cabinet Patient Medication Management Software's Impact on Medication Dispense Rates

Authors: Trey Carter, Claire Johns

Background: As healthcare technology advances, many inpatient institutions have moved to utilizing automated dispensing cabinets (ADC) to store and dispense medications. Less utilized medications may be stored in the institution's central pharmacy and dispensed to non-automated patient-specific bins. Automating the medication storage and distribution process allows the ADC to store patients' medications in patient-specific bins via medication management software and ensures a regulated, monitored process to reduce potential for error. This study is designed to evaluate medication dispensing rates from the central distribution pharmacy pre- and post-patient medication management software implementation at our institution.

Methods: This study is an IRB-approved; pre-post analysis of medication re-dispense rates from a central distribution pharmacy. Patient medication management software was implemented at Baptist Health Lexington in August 2024. A retrospective chart review was conducted on patients who received a medication dispensed from our institution's central distribution pharmacy between January 1st, 2024 and June 30th, 2024 to identify the rates at which medications were re-dispensed. For bulk items, the length of time between consecutive dispenses of the same medication was also assessed. Additionally, post-patient medication management software implementation medication re-dispense data were collected from September 1st, 2024 to February 28th, 2025. The primary endpoint of this study is the difference in the medication re-dispense rate from our central distribution pharmacy pre- and post- patient medication management software implementation. The secondary endpoint is the difference in length of time between consecutive dispenses of bulk items.

Results: In Progress

Conclusion: In Progress

global: Y

3:10pm – 3:25pm B **Correlation of Mid-Upper Arm Circumference in Malnutrition Assessment for Pediatrics in Southern Rural Malawi** Athena D

Moderators: Lisa Woolard
Presenters: Christian Brown
Evaluators: Taylor Wells

Title: Correlation of Mid-Upper Arm Circumference in Malnutrition Assessment for Pediatrics in Southern Rural Malawi

Authors: Christian Brown

Objective: To assess the correlation between mid-upper arm circumference (MUAC) z-scores and World Health Organization (WHO) weight-for-height z-scores; to assess the correlation between MUAC z-scores and various disease states.

Self-Assessment Question: Which of the following disease states is associated with malnutrition measured by MUAC z-score?

Background: Moderate to severe malnutrition is a modifiable risk factor for poor outcomes such as death, increased susceptibility to infectious disease, and poor cognitive function in young children. Screening for nutritional status should be conducted in both inpatient and outpatient/community settings, with common methods being WHO weight-for-height z-score (WHZ), Subjective Global Assessment, and MUAC z-score. MUAC z-scores can be measured using a standardized paper tape, a tool more portable and affordable than tools for measuring height for weight, that is a scale and stadiometer. This assessment compares nutrition status measured via MUAC z-score and WHZ while determining the association between MUAC z-score and prevalence of anemia, malaria, HIV, typhoid, dermatologic infections, and helminth infestations.

Methods: Patient data were collected from multiple community outreach clinics conducted in southern, rural Malawi during May 2024 and provided to the researchers in a de-identified database (therefore, this study was determined to be non-human subjects research by the East Tennessee State University Institutional Review Board). Although healthcare was provided to all presenting patients, only children 2 months to 18 years of age were included in the analysis. Data were excluded if no MUAC risk category was available or if the values recorded appeared incongruent with life. SAS version 9.4 (SAS Institute Inc., Cary, NC, USA) software was used to assess statistical correlations. Spearman coefficient was used to determine the association between MUAC z-score and WHZ, while multinomial regression and Chi-square tests were used to determine the association between MUAC z-score and various disease states.

Results: In progress.

Conclusion: In progress.

global: Y

3:10pm – 3:25pm Y **Pharmacist-Led Interventions to Improve Medication Access to Rifaximin in the Treatment of Hepatic Encephalopathy** Athena B

Moderators: Nathan Wayne

Presenters: Jenny Hollingsworth, Jenny Hollingsworth

Evaluators: Krista Riche

Title: Pharmacist-Led Interventions to Improve Medication Access to Rifaximin in the Treatment of Hepatic Encephalopathy

Author: Jenny Hollingsworth

Objective: The primary outcome will be the identification of optimal processes specialty pharmacy can utilize for the improvement of workflow to impact the time to rifaximin medication acquisition for patients. Secondary outcomes include patient barriers to starting therapy and the number of patients requiring assistance through manufacturer patient assistance programs.

Self-Assessment Question: What is one method specialty pharmacists can utilize to benefit medication acquisition to patients?

Background: The current standard of practice for monitoring adherence of rifaximin in the treatment of Hepatic Encephalopathy (HE) is lacking. This study's purpose is to evaluate the effectiveness of community-based specialty pharmacist interventions in enhancing medication adherence and improving patient access. This study aims to identify best practices that pharmacists can employ to optimize therapeutic outcomes and support patient management of rifaximin therapy in a specialty pharmacy setting.

Methods: Data is anonymous and does not contain patient-specific data points. This is a prospective study utilizing patients who will fill their prescription at a community-based specialty pharmacy located within a health system. Inclusion criteria for patients include those with a confirmed diagnosis of HE, a valid prescription of rifaximin as a new start, and are 18 years of age or older. Exclusion criteria for patients include contraindications to rifaximin or taking rifaximin for treatment other than HE or patients refilling rifaximin. Pharmacist-Led interventions in this study will include coordinated efforts with prescribers to aide in the prior authorization process and utilize patient assistance and copay cards for patients unable to afford rifaximin.

Data collection of these interventions will be conducted over a period of six months from March 1st to April 1st with sample size of 69 patients. Quantitative items in the data will include the number of insurance approval rates, the number of patient applications and approvals or denials for assistance, prescription refills, and the time from prescription receipt to receiving their first fill. The data will be analyzed using descriptive statistics to assess adherence rates with interventions.

Results: The number of prescriptions received throughout the data collection time period was 69. Of the 69, 62 needed prior authorizations which were completed. All 62 prior authorizations received approval with 10 of them needing patient assistance program support. The total number of patients with insurance through Medicare was 27. The total number of patients with insurance through commercial plans was 34. The total numbers of patients with insurance through Medicaid was 7. The total number of uninsured patients was 1. Regarding patient assistance program applications, 16 total applications were submitted and utilized for Medicare patients exclusively. No patient assistance programs were utilized for commercial plan patients.

Regarding time to medication acquisition, the average time from receipt of prescription to medication delivered to patient was 13.7 days. The lowest time was 0 days as represented by receipt of prescription and bedside delivery to patient within the same day upon discharge from the hospital. The longest time was 80 days. The time frame which appeared the most throughout the data collection process was 3 days.

Conclusions: By utilizing the steps outlined in the implemented process of rifaximin acquisition, a quicker medication acquisition time has been demonstrated for patients to begin optimal therapy for treatment with hepatic encephalopathy with a value of 12.5 days, thus demonstrating an improvement in workflow processes. It furthermore displays the avenues in which patients can receive medication by utilizing guided pharmacist support in prior authorizations and patient assistance programs. This study illustrates the importance of pharmacist-led interventions in the community space and showcases pharmacists' impact on positive patient outcomes in optimization of therapy with rifaximin.

global: Y

3:10pm – 3:25pm R **Evaluating the Change in Vasopressor Requirements in Patients with Septic Shock Receiving Methylene Blue** Athena H

Moderators: John Carr
Presenters: Taylor Dodd
Evaluators: Kelly Rumbaugh

1. **Title:** Effect of Methylene Blue on Vasopressor Requirements in Patients with Septic Shock
2. **Resident Email: taylor.dodd2@hcahealthcare.com**
3. **Authors:** Taylor Dodd, Stephanie Lesslie
4. **Background:** Septic shock is defined as a severe infection causing an abnormal immune response with the potential to progress to hypotension and organ failure. Vasopressors may be required to achieve mean arterial pressures sustainable to life. Methylene blue has shown promising data in improving hemodynamics through the inhibition of nitric oxide, a vasodilator released by the body in a shocked state. A 2023 trial found that early methylene blue administration in septic shock led to earlier vasopressor discontinuation and shorter hospital durations. Other studies have been conducted that have shown a reduction in vasopressor requirements and increased survival rates with the addition of methylene blue.
5. **Methods:** This single-center, retrospective cohort study aimed to assess the change in vasopressor requirements in patients with septic shock that received methylene blue. Patients were included if they were 18 years old, admitted to the emergency department or intensive care unit at time of methylene blue administration, and used for the indication of sepsis or septic shock. Patients were excluded if they had contraindications to methylene blue, were pregnant, or incarcerated. The primary outcome was the change in vasopressor requirements 12 hours after administration of methylene blue. The secondary outcomes investigated were change in vasopressor requirements 6 and 24 hours after methylene blue administration, hospital and ICU length of stay, total number of methylene blue doses, mortality, and reported adverse effects.
6. **Results:**
   In this descriptive study, 38 patients met inclusion criteria; 2 of which were excluded from this study. For the excluded patients, 1 was incarcerated and the other had a creatinine clearance < 15 mL/min. For the primary outcome of change in vasopressors 12 hours after methylene blue administration, we observed a decrease in vasopressor requirements of 17.5 mcg/minute, reported in norepinephrine equivalents.
   At the 6 hour time point after methylene blue administration, we observed a decrease in vasopressor requirements of 2.5 mcg/minute. There was a decrease in vasopressor requirements observed 24-hours after methylene blue administration of 14.0 mcg/minute. In the patients included, there was an all-cause mortality rate of 78%. The median ICU length of stay was 4 days and the median hospital length of stay was 5 days in patients that received methylene blue. There were no reported adverse effects reported in patients who received methylene blue.
7. **Conclusion:** Overall, our study observed that patients who received methylene blue had decreased vasopressor requirements at 6, 12 and 24 hours after administration. No adverse effects were identified.

global: Y

3:10pm – 3:25pm R **Evaluation of Intravenous Insulin Infusions in the Treatment of Mild Diabetic Ketoacidosis (DKA)** Athena G

Moderators: April Quidley

Presenters: Janna Lewis

Evaluators: Christina Thurber

Title: Evaluation of Intravenous Insulin Infusions in the Treatment of Mild Diabetic Ketoacidosis (DKA)

Authors**:** Janna Lewis, Andrew Baxley, Carrie Harding, and Aayush Patel

Background: Diabetic ketoacidosis (DKA) is a serious complication of diabetes, characterized by hyperglycemia, metabolic acidosis, and ketosis, and contributing to over 500,000 annual hospital days. The standard treatment for DKA involves the administration of intravenous (IV) insulin infusions to restore normal blood glucose levels, suppress ketosis, and correct acidosis. This method allows for precise and rapid titration of insulin doses based on blood glucose and ketone monitoring. While insulin infusions are effective for managing DKA, our current practice presents several challenges, especially in mild DKA. Intensive monitoring of blood glucose and electrolytes requires significant resources, with a particular concern for hypokalemia. Additionally, transitioning patients from IV to subcutaneous (SQ) insulin can be problematic, leading to hyperglycemia and transition failures, if not executed correctly. Evidence supports the use of SQ insulin as an effective treatment for mild DKA, showing that it can achieve similar glycemic control to IV insulin while reducing the need for intensive monitoring. Studies have demonstrated that SQ insulin, when administered appropriately, leads to safe and effective treatment of mild DKA, with a lower risk of complications such as hypokalemia and hypoglycemia compared to IV insulin therapy. The purpose of our study is to assess the impact of IV insulin in the treatment of mild DKA, with the goal of guiding clinical decisions and improving resource utilization.

Methods: This retrospective chart review was conducted at Piedmont Columbus Regional Midtown, from April 1, 2024, to September 30, 2024. The primary objective is to evaluate the time to resolution of DKA, defined as BG < 200 mg/dL, serum bicarbonate ≥ 15 mEq/L or pH levels > 7.30 and anion gap ≤ 12. Secondary objectives include the duration of therapy, hospital length of stay, the incidence of hypoglycemia and hypokalemia, transitional failures, and the cost of administering IV insulin infusions. Patients included in this study were adults aged 18 years or older diagnosed with mild DKA. The diagnosis of mild DKA was defined based on standard criteria, including a blood glucose level > 200 mg/dL, arterial pH of 7.25 to 7.30 or serum bicarbonate levels of 15 to 18 mEq/L, with the presence of serum ketones. Primary and secondary objectives will be summarized using descriptive statistics.

Results: This study found that the mean time to resolution of mild DKA was 10.9 hours, with an average insulin therapy duration was 17.08 hours. These results indicate a moderate treatment duration, highlighting the time required for metabolic stabilization in this patient population. In terms of safety, there were 4 patients that experienced hypoglycemia, 11 patients that experienced hypokalemia, and 2 patients experienced reoccurrence of DKA, which highlights the need for close monitoring. Additionally, from a cost perspective, the average hospital length of stay was 5 days, and the average direct treatment cost per patient was about 243 dollars. However, it’s important to note that this does not include hospitalization costs, additional medications, or other medical expenses, meaning the true cost burden of this treatment is likely much higher.

Conclusion: In conclusion, the findings suggest that while IV insulin is effective for mild DKA, it poses risks for hypokalemia and hypoglycemia, indicating the need for close monitoring and consideration of alternative treatments like subcutaneous insulin. At this time, our future directions include exploring the use of subcutaneous insulin for the treatment of mild DKA. Recent studies have demonstrated that subcutaneous insulin lispro is as effective as intravenous insulin in managing mild DKA. This alternative treatment offers comparable outcomes, including similar rates of blood glucose and ketone normalization. Given its efficacy and potential benefits, subcutaneous insulin presents a promising alternative for appropriate patients.

Contact: Janna.Lewis@Piedmont.org

global: Y

3:10pm – 3:25pm | I **Comparison of Rapid Diagnostic Tests on Antibiotic Use in Gram-negative Bloodstream Infections within an Academic Health-system** Athena A

Moderators: Rina Nath
Presenters: Colter Sheveland
Evaluators: Karen Babb

Title: Comparison of Rapid Diagnostic Tests on Antibiotic Use in Gram-negative Bloodstream Infections within an Academic Health-system

Authors: Colter Sheveland, Cassie Ferguson, Sarah Al-Mansi, Kayla Antosz, Caroline Jozefczyk, Andrew Gainey, Robert Daniels, Joseph Kohn, Chenweng Teng, Anna-Kathryn Burch, Majdi Al-Hasan, Brandon Bookstaver

Background: Gram-negative bloodstream infections (GNBSIs) lead to significant morbidity and mortality. Technologic advances in rapid diagnostic tests for pathogen identification and antimicrobial susceptibility testing (AST) have enhanced the ability for clinicians to more promptly initiate patients on stewardship-conscience and appropriate antimicrobial therapy compared with traditional culture and susceptibility methodologies. The purpose of this study was to evaluate the antimicrobial stewardship program benefit of the addition of the Accelerate Pheno® (AP) system for rapid phenotypic AST with an existing blood culture identification multiplex polymerase chain reaction (BCID2®)/Vitek 2®/ matrix-assisted laser desorption/ionization time (MALDI) workflow.

Methods: An IRB-exempt, multi-centered, retrospective, pre-/post-cohort study was conducted in adult patients hospitalized with aerobic GNBSIs at one of four Prisma Health – Midlands major acute care facilities. Notable exclusions were patients with polymicrobial GNBSIs, those who left against medical advice, transferred to an outside facility, discharged home, or died prior to receipt of antibiotic therapy initiation or blood culture identification results. Baseline characteristics and endpoints were manually collected using a pre-specified REDCap form. The primary endpoint of the time to first appropriate streamlined therapy (FAST) was evaluated in the AP group from August 5, 2022 to October 31, 2022 and in the post-AP group from May 1, 2024 to July 31, 2024. Key secondary endpoints included discordances between AP-determined and BCID2®- or MALDI-determined pathogen identification, discordances between AP-determined and Vitek 2®-determined AST results, and time to de-escalation off carbapenems, anti-pseudomonal beta-lactams, and Gram-negative combination therapy.

Results: In Progress

Conclusions: In Progress

global: Y

3:10pm – 3:25pm L **Cefazolin Plus Metronidazole Compared to Cefoxitin Alone for Surgical Prophylaxis in Hysterectomies** Parthenon 1

Moderators: Hania Joudeh
Presenters: Tristan Jernigan
Evaluators: Jennifer Adema

Cefazolin Plus Metronidazole Compared to Cefoxitin Alone for Surgical Prophylaxis in Hysterectomies

Tristan Jernigan, Austin Roberts, Kendra Spilkin, Benjamin Casey

Background: Antibiotic prophylaxis is a critical component of surgical site infection prevention in hysterectomy procedures. The 2013 IDSA guidelines recommend cefazolin, cefoxitin, or ampicillin-sulbactam as first-line agents, administered within one hour prior to surgical incision. When choosing between the guideline recommendations it is important to consider reported efficacy and the logistical implications of different regimens. Cefazolin is redosed every four hour while cefoxitin is redosed every two hours. In a 2017 study by Till and colleagues, cefazolin combined with metronidazole reduced the incidence of post-operative infections compared to cefoxitin alone in hysterectomy patients. Based on these findings, our institution transitioned from cefoxitin to a cefazolin plus metronidazole regimen in May 2022. This study evaluated the impact of this change on compliance with surgical prophylactic antibiotic administration, focusing on whether this transition increased appropriate prophylaxis rates by leveraging cefazolin's longer dosing interval to reduce the incidence of missed or delayed prophylactic doses.

Methods: This was a single-center, retrospective, pre and post implementation cohort study of adult patients who underwent a hysterectomy between November 15th, 2021 and November 14th, 2022. Patients were identified by a generated list of patients who underwent a hysterectomy during the designated time frame and were randomized. Patients were included if prophylactic antibiotics were administered. Patients were excluded based on extremes of age or if clindamycin and gentamicin were administered for surgical prophylaxis. The primary endpoint was the percentage of patients who received appropriate antimicrobial surgical prophylaxis. Appropriate prophylaxis was defined as preoperative administration within one hour of surgical incision and subsequent redosing within thirty minutes of the recommended frequency. The secondary endpoints included the incidence of post-operative infection, direct drug cost with each regimen, and a subgroup analysis of the primary outcome to evaluate reasons for inappropriate prophylaxis.

Results: A total of 260 patients were screened, and 226 (n = 140 cefoxitin, n = 86 cefazolin plus metronidazole) met criteria for our study. Patients who received clindamycin plus gentamicin for surgical prophylaxis (n=34) were excluded from the primary and secondary endpoints. Baseline characteristics were similar between the two groups. Cefoxitin was associated with significantly higher appropriate prophylaxis rates when compared to cefazolin plus metronidazole (88.6% vs. 76.8%, p=0.009). There was no significant difference in post-operative infections between the two groups (0.4% vs. 0%, p=0.32). Subgroup analysis of the primary outcome found significantly more cases of inappropriate dosing in the cefazolin plus metronidazole group (4.7% vs 0%, p=0.02) and significantly more cases of redosing errors with cefoxitin (2.9% vs. 0%, p=0.04).

Conclusion: While cefoxitin was associated with higher rates of appropriate prophylaxis, the primary reason for inappropriate prophylaxis in the cefazolin plus metronidazole group was the use of cefazolin alone for prophylaxis, which is an appropriate, guideline-recommended prophylaxis regimen. Cefoxitin was associated with a higher rate of redosing errors when compared to cefazolin plus metronidazole. Overall rates of post-operative infection were low, with no significant difference being observed between the two groups.

Disclaimer: This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

global: Y

3:10pm – 3:25pm L **Comparison of Analgesia Following Coronary Artery Bypass Grafting with the Use of Scheduled Acetaminophen** Olympia 2

Presenters: Morgan Carhart

Evaluators: Kelly Covert

TITLE: Comparison of Analgesia Following Coronary Artery Bypass Grafting with the Use of Scheduled Acetaminophen

AUTHORS: Morgan Carhart, Brock Dorsett, Emily Johnson, Kayla Pangburn

BACKGROUND: Enhanced Recovery After Surgery (ERAS) protocols are comprehensive, patient-centered, and evidence-based protocols that improve post-operative patient outcomes. Pain management is a major focus of ERAS protocols, which advocate for a multimodal, opioid-sparing approach to reduce hospital length of stay (LOS), complications, and opioid use following surgery. Intravenous (IV) acetaminophen (Ofirmev) is often used as a part of ERAS protocols and its use in the post-operative setting has been established for many different procedures. However, there are relatively few studies examining its use post-cardiac surgery and its benefits in terms of reducing post-operative opioid consumption are unclear. In January 2024, Cape Fear Valley Medical Center implemented an ERAS protocol for patients undergoing coronary artery bypass grafting (CABG) that includes one dose of IV acetaminophen followed by scheduled oral acetaminophen and as-needed hydromorphone via patient-controlled analgesia (PCA) pump. The purpose of this study was to evaluate the effects of initiating scheduled acetaminophen following CABG on the utilization of opioids during the first 48-hour post-operative period.

METHODS: This was a retrospective, single-center cohort study that included patients receiving CABG at Cape Fear Valley Medical Center from January 2023 to December 2024. The pre-ERAS group included patients receiving CABG from January to December 2023, and the post-ERAS group included patients receiving CABG from January to December 2024 that received the scheduled acetaminophen protocol. The primary endpoint was the difference in mean oral morphine milligram equivalents (oMMEs) used by patients receiving CABG before and after the implementation of the ERAS protocol at Cape Fear Valley Medical Center.

RESULTS: 301 patients met inclusion criteria with 143 in the pre-ERAS group and 157 in the post-ERAS group. Patients in the pre-ERAS group used a mean of 179.25 oMMEs compared to 193 oMMEs in the post-ERAS group (difference 13.75, 95% CI -42.22 to 14.72, p=0.34). There were no significant differences in secondary endpoints including as-needed opioid use, length of stay, or naloxone use between groups, but patients in the pre-ERAS group used more non-opioid pain medications than patients in the post-ERAS group (40 vs. 26, p=0.017).

CONCLUSION: The use of scheduled acetaminophen post-CABG did not significantly reduce the amount of total oMMEs for patients undergoing CABG within the 48-hour post-operative period. Limitations to the study that should be considered include the retrospective nature of this study, utilization of acetaminophen post-CABG in the pre-ERAS group, and a higher number of opioid-tolerant patients on admission in the post-ERAS group.

global: Y

3:10pm – 3:25pm M **Does corrected calcium adequately reflect calcium levels in critically ill patients?** Athena C

Moderators: Cristy Patille
Presenters: Ally Krueger
Evaluators: Carrington Royals

Title: Does corrected calcium adequately reflect calcium levels in critically ill patients?

Authors: Allison Krueger, Caitlin Thomas

Objective: Review methods to assess patients' calcium status and whether corrected calcium accurately represents the status of critical care patients.

Self Assessment Question: Which of the following is TRUE regarding the original Payne corrected calcium equation?

Background: Abnormalities in calcium status are common among critically ill patients, and disturbances in calcium status have been linked with increased mortality and morbidity. Accurate representation of calcium status is key in managing patients in the intensive care unit (ICU). There are two main ways of measuring calcium in a blood sample: total serum calcium (totCa) and ionized calcium (measurement of unbound calcium). Since only approximately half of the serum calcium is biologically active under normal conditions, equations were developed to estimate that value using serum calcium levels before labs were capable of directly testing ionized calcium. The most well know adjustment is the modified Payne equation that "corrects" totCa from reduced albumin levels. A formula by Pftizenmeyer et al. in 2007 was designed to "correct" totCa for very elderly patients in a facility that does not utilize iCa. The purpose of this study is to evaluate the accuracy of albumin corrected calcium and total serum calcium compared to ionized calcium at discerning calcium homeostasis in patients requiring critical care.

Methods: This is a single-center, retrospective cohort study that was deemed exempt from Institutional Review Board approval. It was conducted in a large, tertiary level, community teaching hospital with patients across seven adult ICUs. The electronic medical record was reviewed for inclusion in the study. Patients were included if the following labs were collected with 10 minutes of each other: ionized calcium, serum calcium, and serum albumin. Patients were excluded if they received albumin within the 24 hours prior to the lab collection and/or received intravenous calcium within the 12 hours prior to lab collection. The primary outcome is to assess total calcium and modified Payne corrected calcium for noninferiority to ionized calcium.

Results: A total of 25 patients were included in this study. The mean levels for iCa, totCa, and corCa were 1.12 mmol/L, 8.4 mg/dL, and 9.5 mg/dL respectively. There was a statistical difference between the three mean levels ($F = 11.35$, $p < 0.001$). There was a statistical difference between the three methods at categorizing calcium status ($Q = 7.98$, $p = 0.0185$). Total calcium was found to be the outlier. Bland-Altman analysis of totCa shows a mean difference of 0.13 mmol/L (95% CI -0.06 – 0.32). Bland-Altman analysis of corCa shows a mean difference of 0.01 mmol/L (95% CI -0.15 – 0.17).

Conclusion: Total calcium was inferior to iCa when it comes to assessing patient calcium status. This study found that corCa compared to iCa was noninferior at predicting normocalcemia. Furthermore, the Bland-Altman analysis shows that, when comparing methods for getting an accurate value, both total calcium and corrected

calcium have too wide of variations to accurately rely on them.

global: Y

3:10pm – 3:25pm S **Prevalence, Incidence, and Outcomes of Selective-Serotonin Reuptake Inhibitor (SSRI) and Serotonin-Norepinephrine Reuptake Inhibitor (SNRI) Duplication of Therapy** Olympia 1

Presenters: Gabrielle E. Hall

Evaluators: Elizabeth Hudson, Jasmine Jones

Title:

Prevalence, Incidence, and Outcomes of Selective-Serotonin Reuptake Inhibitor (SSRI) and Serotonin-Norepinephrine Reuptake Inhibitor (SNRI) Duplication of Therapy

Authors:
Gabrielle E. Hall, Aaryn Brewster, Cameron Lanier

Objective:

Identify the prevalence, incidence, and associated outcomes of duplicative prescribing and ordering of SSRI and SNRI therapy at three regional hospitals within a regional health system.

Self Assessment Question:

What percentage of patients on SSRI or SNRI therapy at baseline were prescribed or ordered duplicative therapy while admitted to a study hospital during the research period?

Background:

Multiple patients have been identified as having been prescribed or ordered duplicative SSRI and SNRI therapy. This is not a guideline recommended therapy due to the increased risk for adverse events, specifically serotonin syndrome, resulting from using multiple serotonergic agents in combination. Our goal is to identify how often these duplications are occurring and to promote patient safety through recommending appropriate prescribing practices.

Methods:

This is a retrospective chart review with subgroup analysis. The patient population consists of patients exposed to either two SSRIs, two SNRIs, or an SSRI and SNRI combination while inpatient. Patients were divided into two groups based on those on duplicative therapy prior to admission and those who started on duplicative therapy during admission.

The primary outcome for this study is prevalence of duplications of therapy as compared to those on SSRI or SNRI at baseline. The secondary outcome is incidence of duplications of therapy as compared to those on an SSRI or SNRI at baseline. Further secondary outcomes of the study include a logistic regression analysis comparing the exposure group to the control group to assess outcomes including similarities and differences in their baseline demographics and reported adverse events.

Results:

The primary outcome for this study was prevalence of duplications of therapy where out of 7545 patients on an SSRI or SNRI at baseline 152 patients (2%) were on duplicative therapy. The secondary outcome of incidence of duplications of therapy revealed 81of the of 7545 patients (1%) on an SSRI or SNRI at baseline were started on duplicative therapy inpatient. Of the 152 patients on duplicative therapy, 81 patients (53%) were initiated on those duplicate agents while inpatient. Another finding includes 588 patients out of 7545 patients (8%) on an SSRI or SNRI at baseline were on multiple serotonergic agents. Frequently duplicated medications include escitalopram with duloxetine (40/152, 26%), sertraline with duloxetine (40/152, 26%), and fluoxetine with

duloxetine (19/152, 12.5%). Duloxetine was found to be a duplicated medication in 111 of 152 patients (73%).

global: Y

3:10pm – 3:25pm T **Evaluation of Hospital Readmission Rates on Patients Who Completed Medication Reconciliation With A Transitions Of Care Clinical Pharmacy Specialist (CPS) Versus Those Who Did Not** Athena I

Moderators: Elly Glazier
Presenters: Margaret Stubblefield
Evaluators: Devon Burhoe

Title: Evaluation of Hospital Readmission Rates on Patients Who Completed Medication Reconciliation With A Transitions Of Care Clinical Pharmacy Specialist (CPS) Versus Those Who Did Not

Authors: Margaret Stubblefield, Helen T. Bryant, Candace Nichols, Kristina Hazard

Background: Transitions of care from inpatient facilities to outpatient providers can lead to adverse health outcomes and medication errors. Clinical pharmacy specialists are utilized at Kaiser Permanente during transitions of care to prevent these adverse outcomes through a medication reconciliation service.

Methods: This is a retrospective, observational, IRB-exempt cohort study including Kaiser Permanente of Georgia patients discharged from a hospital to their personal residence. Patients will be excluded from the study if they have already had an office, video, or telephone visit with a medical doctor or were discharged from acute care centers, clinical decisions units, or skilled nursing facilities. The primary outcome of the study is to measure the readmission rates at 30 days after hospital discharge for patients who have a medication reconciliation completed by a transitions of care CPS compared to patients who did not receive a CPS-led medication reconciliation. The secondary outcome is to determine the percentage of patients who do not have a medication reconciliation completed by a transitions of care CPS. Primary outcome data will be analyzed using a Chi-square test of association.

Results: In Progress

Conclusion: In Progress

global: Y

3:40pm – 3:55pm A **Cutting Pharmacy Waste: Establishing a Process to Streamline Excess Medication Sharing** Olympia 1

Moderators: Saumil Vaghela

Presenters: JingJie Yu

Evaluators: Michael Saxon

Cutting Pharmacy Waste: Establishing a Process to Streamline Excess Medication Sharing

JingJie Yu, Abbi Rowe

AdventHealth Orlando, Orlando FL

Objective: (1) To evaluate the current medication-sharing process, (2) identify, implement, and assess a new and more efficient process to facilitate medication-sharing.

Self-assessment:

Background: Poor management of medication inventory can lead to shortages, and waste and is associated with increased pharmacy costs. The nine campuses across AdventHealth's Central Florida Division (CFD) can easily share medications due to regulatory allowances, internal courier services, and proximal geography. Pharmacy buyers currently use a Microsoft Teams chat to attempt medication transfers. This method lacks an organized framework to ensure all necessary information is provided to effectively facilitate sharing excess inventory.

Methodology: This is a multi-centered, pre-test and post-test comparative study of medication transfer attempts between hospital campuses in CFD. The pre-intervention period started from March 1, 2024, to August 31, 2024. The post-intervention takes place from February 1, 2025, to March 31, 2025. T-test or Wilcoxon Signed Rank test will be used for statistical analysis. All medication transfer attempts were included in the study. Non-medication transfers, supply transfers, and transfers outside of the CFD campuses were excluded. This study's primary outcome is the number of successful medication transfer attempts. Secondary outcomes included cost avoidance and total volume of medication waste reduction.

Results: In the pre-test period, 8 out of 9 campuses attempted a medication transfer via the designated Teams Chat. There were 83 attempted transfers representing a total of 924 individual units and a total acquisition cost of $64,444.93. Of the 83 attempts only 3 were successfully completed with just 2 of these having confirmed administrations. The total acquisition cost of the completed transfers was $7,404.30. Nine of the transfer attempts were missing key pieces of information to evaluate the feasibility of use at another campus. Of these, 1 was missing the medication strength, 6 were missing the quality available for transfer and 3 were missing product expiration dates. Post-test results are in progress.

Conclusion: The historic process of sharing excess medication inventory across the division has resulted in minimal successful transfers. During the pre-intervention period, most campuses made relatively few transfer attempts. A new process utilizing a standardized Microsoft Form with required fields was implemented to help facilitate transfer attempts. Education on the new process and ideal medication transfer targets were provided to pilot campus buyers and operations managers. Post-test results are in progress. Transfer attempts lacking the necessary information to assess the feasibility were most commonly missing information on the quality of excess medication available for transfer. This method hindered the effectiveness of medication transfers.

global: Y

3:40pm – 3:55pm B **Evaluating the safety of transitioning to an adalimumab biosimilar from the reference product (Humira®) in adult patients with rheumatic conditions** Athena C

Moderators: Jonathan Schnider
Presenters: Riya Shah
Evaluators: Brandon Sucher

Title: Evaluating the safety of transitioning to an adalimumab biosimilar from the reference product (Humira®) in adult patients with rheumatic conditions

Authors: Riya Shah, Michelle Morales, Ava Afshar, Katina Tsagaris

Objective: To compare the difference between treatment emergent adverse events (TEAE) in patients on brand Humira® (adalimumab) compared to when switched to an adalimumab biosimilar for a non-medical reason. The goal is to provide real world, timely reference data for clinical practice regarding any safety differences.

Background: Biosimilars are highly similar to an FDA-approved biologic medication, known as the reference product, and are expected to have no clinically meaningful differences in terms of efficacy and safety. Biosimilars were introduced to increase market competition and offer efficacy that is not clinically different from the reference product but at lower cost, thus increasing access. Since 2023, ten FDA-approved adalimumab (ADA) biosimilar products have entered the US market. Insurance companies have adjusted their prescription formularies since the launch of these biosimilars, with many now mandating patients switch from the reference product, Humira®, to an adalimumab biosimilar instead.
Given the recent introduction of adalimumab (ADA) biosimilars, their real-world safety profile in a US population with rheumatic conditions remains unclear.

Methods: A single center, paired-sample, retrospective study was conducted at the two outpatient Emory Rheumatology Clinics at Emory University Hospital Midtown (EUHM) in Atlanta, GA. Eligible patients were identified via the electronic medical record. Inclusion criteria consisted of adults managed and prescribed Humira® by an EUHM rheumatologist. Patients must have been on Humira® for at least 3 months before switching to an ADA biosimilar for a non-medical reason by an EUHM rheumatologist. In addition, the switch must have occurred between 1/1/2024 and 9/1/2024 with one or more documented clinical follow-up(s) by 11/30/2024, the end of the study period, following the ADA biosimilar initiation. The primary outcome was the differences of TEAE in patients on Humira® compared to an ADA biosimilar. This was determined by comparing the number of TEAE reported on Humira® the 3 months before the ADA biosimilar switch and the number of TEAE reported while on ADA biosimilar through 11/30/2024. Secondary outcomes included ADA biosimilar discontinuation rate by the end of the study period, reason for biosimilar discontinuation (if applicable), and the type of TEAE experienced.

Results: A total of 177 patients switched from Humira® to an ADA biosimilar between 1/1/2024 and 9/1/2024 of which 94 met inclusion criteria. Of these, 9 patients (9.6%) reported TEAE with 7 reported side effects while on Humira® and 12 while on an ADA biosimilar. Two patients had TEAE on both
Humira® and 12 while on an ADA biosimilar. Two patients had TEAE on both Humira® and the ADA biosimilar, four patients had TEAE on Humira® but none with the ADA biosimilar, and three patients had no TEAE on Humira® but did on the ADA biosimilar (p = 1.000, 0.75 (95% CI 0.110- 4.433)). The following TEAE were reported with Humira®: pruritus (n=2), itchy eyes (n=1), injection site reactions (n=3), and abdominal pain (n=1). Patients reported the following on the ADA biosimilar: pruritus (n=1), scaly skin (n=1), sores on scalp (n=1), inner ear itch (n=1), spreading rash (n=1), malaise (n=1), dizziness (n=1), nausea (n=1), peeling skin (n=1), injection site reaction/redness and swelling (n=1), burning upon injection (n=1), and genital itching (n=1). In addition, 11 of

94 patients (11.7%) discontinued the ADA biosimilar for reasons like insurance preference (2/11, 1.8%), adverse events (3/11, 2.7%), decreased efficacy (3/11, 2.7%), pregnancy (1/11, 0.9%), treatment de-escalation (1/11, 0.9%), and unclear (1/11, 0.9%).

Conclusion: No statistically significant difference was found between the number of reported TEAE when patients were on Humira® versus when switched to an ADA biosimilar. The majority of patients tolerated both Humira® and the ADA biosimilars, however, there were numerical differences in the amount of TEAE on each of the medications. A larger sample is needed to determine if a difference exists in TEAE amongst patients on Humira® versus when switched to an ADA biosimilar.

global: Y

3:40pm – 3:55pm B **Evaluation of Ambulatory Pharmacist Interventions in Patients with Type 2 Diabetes and Medicaid Managed Care Contracts** Athena D

Moderators: P. David Brackett

Presenters: Layna Fox

Evaluators: Kristina Vizcaino

Title: Evaluation of Ambulatory Pharmacist Interventions in Patients with Type 2 Diabetes and Medicaid Managed Care Contracts

Authors: Layna Fox, Kaleigh Mikolichek, Julie Pruitt, Catie Harper

Objective: At the conclusion of this presentation, the participant will be able to describe a population health intervention to address care gaps in patients with Medicaid Managed Care plans.

Self Assessment Question: According to this data, where do you feel pharmacists can contribute value to this population of patients? A) Improving adherence, B) Encouraging use of guideline-directed therapy, C) Providing telehealth follow-up for high-risk patients, D) All of the above

Background: North Carolina launched Medicaid Managed Care plans in July 2021, and expanded Medicaid access to adults earning up to 138% of the federal poverty limit on December 1, 2023. Medicaid Managed Care contracts involve value-based care quality measures for disease state control for chronic conditions, including diabetes and hypertension, which influence health system reimbursement. Despite having insurance, patients with Medicaid face substantial barriers to accessing healthcare including financial limitations and transportation. The purpose of this study was to evaluate the impact of proactive pharmacist intervention on quality measures and access to care among patients with type 2 diabetes (T2D) that were newly eligible for Medicaid Managed Care plans.

Methods: This was a single-center, prospective, pre-post matched, IRB-reviewed and exempt cohort analysis that included patients with T2D with initiation of a Medicaid Managed Care plan December 1, 2023 through August 30, 2024 that were engaged by an embedded pharmacist at a Cone Health Primary Care clinic. Eligible patients were identified through a monthly report and scheduled with the appropriate clinic-based pharmacist, who then worked with the patient and their primary care provider to manage T2D and associated disease states. Demographics, medications, and clinical data at baseline prior to pharmacy engagement and at most recent follow-up, through December 31, 2024, were collected via chart review. The primary outcome was percent of patients meeting Medicaid quality metrics for diabetes (A1c < 9%) and hypertension (BP <140/90 mmHg) after pharmacist intervention compared to baseline. The primary outcome was assessed using a McNemar’s Chi-Square test. Baseline characteristics and secondary outcomes were reported with descriptive statistics.

Results: There were 63 patients engaged over 184 pharmacy appointments during the study period. Pharmacists utilized telehealth during the initial encounter for 45 (71.4%) patients. There were 31 (49.2%) female patients and 30 (47.6%) patients who identify as Black or African American. The mean age was 51.7 years and mean baseline A1c was 9.9%. Most patients reported a social determinant of health barrier. At baseline, 21 (33.3%) patients were achieving the primary composite outcome of A1c < 9% and BP < 140/90 mmHg, which increased to 39 (61.9%) patients at the end of the study period (difference 28.6%, 95% confidence interval 11.5%-45.7%, p = 0.001). The median time between first pharmacist engagement and last follow-up through December 2024 was 202 days (IQR 158 days). The most common medication therapy problem identified by pharmacists was adherence in 82.5% of patients, and the most common drug therapy interventions were medication counseling, adjusting pharmacotherapy, and assisting in access to care.

Conclusion: Proactive pharmacist intervention in patients with Medicaid Managed Care contracts positively contributed to patients’ access to care, disease state management, and health system performance on Medicaid quality measures for diabetes and hypertension control.

global: Y

3:40pm – 3:55pm C **Use of SGLT2 Inhibitors in Heart Failure Patients Requiring Renal Replacement Therapy** Athena B

Moderators: Elaina Baaklini
Presenters: Meggie Gilkey
Evaluators: Karen Barlow

Title: Use of SGLT2 Inhibitors in Heart Failure Patients Requiring Renal Replacement Therapy

Authors: Meggie Gilkey, PharmD, Lindsay Reulbach, PharmD, BCPS, Jessica Howington, PharmD, Andi Ray, PharmD, BCCP

Background: Sodium-glucose cotransporter 2 (SGLT2) inhibitors, initially studied for type 2 diabetes, were found to reduce heart failure (HF) hospitalizations and cardiovascular death in both heart failure (HF) with reduced ejection fraction (HFrEF) and heart failure with preserved ejection fraction (HFpEF) populations. Additionally, they slow renal disease progression by 35–50%. As SGLT2 inhibitors become central to guideline-directed medical therapy (GDMT), their role in patients with concurrent HF and chronic kidney disease (CKD) has drawn attention. Concerns remain regarding use in severe CKD, especially among those on renal replacement therapy (RRT). To address this gap, we conducted a study evaluating the real-world safety and efficacy of SGLT2 inhibitors in HF patients requiring RRT.

Methods: A single-center, retrospective, observational, cohort study was conducted at Prisma Health Greenville Memorial Hospital. Patients 18 years or older admitted for HF who received an SGLT2 inhibitor and required RRT between October 1, 2023, and June 30, 2024, were included. Patients were monitored for outcomes over six months post-index hospitalization. HF-related admissions were identified using emergency department (ED) diagnoses, and RRT status was determined via nephrologist progress notes. Exclusion criteria included type 1 diabetes, pregnancy, non-HF SGLT2 inhibitor use, recent RRT initiation, RRT nonadherence, or malignancy. The primary outcome was SGLT2 inhibitor related adverse events. The secondary outcome assessed HF-related ED visits or hospitalizations.

Results: A total of 725 patients were screened and 7 were included. All patients received empagliflozin during their hospitalization. RRT was split between hemodialysis (57.1%) and peritoneal dialysis (42.8%). One patient (14.3%) experienced an SGLT2 inhibitor related adverse event, resulting in an ED visit 16 days post-index hospitalization. The adverse event was a urogenital infection in a patient with a known history of frequent urinary tract infections. No episodes of diabetic ketoacidosis, hypoglycemia, or hypotension were observed. No hospitalizations occurred due to SGLT2 inhibitor-related adverse events. Two HF-related hospitalizations occurred during the 6-month follow-up. One patient (14.3%) died during the study period, although the death was not related to SGLT2 inhibitor therapy or HF exacerbation.

Conclusion: This real-world, observational study provides preliminary insight into the safety and efficacy of SGLT2 inhibitors in HF patients requiring RRT. Although limited by a small sample size, the findings suggest that SGLT2 inhibitors may be well tolerated, with minimal adverse events and potential benefit in reducing HF-related hospitalizations. However, due to the observational nature and limited scope of the study, no definitive conclusions can be drawn. Larger, controlled studies are needed to better understand the role of SGLT2 inhibitors in this high-risk population and to inform clinical decision-making with greater confidence.

global: Y

3:40pm – 3:55pm R **Evaluation of Pharmacist-Driven Enoxaparin Dosing Using Anti-Xa Monitoring in Obese Trauma Patients** Athena G

Moderators: Erica Merritt
Presenters: Kathleen White
Evaluators: Sean Tran

Title: Evaluation of Pharmacist-Driven Enoxaparin Dosing Using Anti-Xa Monitoring in Obese Trauma Patients

Authors: Kathleen White, Jacquelyn Crawford, Cameron Lanier, Austin Roe, Jess Brumit, Jen Tharp, Vera Wilson

Background: Obesity and trauma are both independent risk factors for the development of venous thromboembolism (VTE) including deep venous thrombosis (DVT) and pulmonary embolism (PE). Enoxaparin (in the setting of adequate renal function) is the preferred agent for VTE prophylaxis in trauma patients by the Eastern Association for the Surgery of Trauma, Western Trauma Association, and American Association for Surgery of Trauma/ American College of Surgeons Comittee. Recent studies have suggested that weight-based dosing strategies may result in prophylactic concentrations more reliably than fixed dosing and that pharmacist-driven protocols are effective in adjusting enoxaparin based on levels to maintain prophylactic efficacy. While an association between higher BMI and subprophylactic enoxaparin dosing has been identified, data is still lacking to describe the prevalence and impact of weight-based dosing in obese trauma patients. Given increasing national trends in obesity and higher rates of obesity in the Appalachian region compared to the national average, we sought to evaluate the efficacy of this protocol in our population presenting to the Level 1 Trauma Center of the region.

Methods: This was a retrospective study conducted via chart review of adult (aged greater than or equal to 18) trauma patients presenting to Johnson City Medical Center in Johnson City, TN between October 1st, 2022 and May 1st, 2024. Patients were included if they met criteria for the weight-based protocol (trauma without traumatic brain injury or spinal cord injury, CrCl 30 mL/min and above, and weight of 50 kg or more), had received 2-3 consecutive doses of enoxaparin, and had at least one Xa level for evaluation. Patients were excluded if they did not meet the above criteria, were not on the protocol, pregnant, incarcerated, or reported therapeutic anticoagulation prior to hospital admission. The primary outcome is efficacy (frequency) of the protocol in achieving prophylactic Xa levels. Additional outcomes collected wil be incidence of VTE, incidence of International Society of Thrombosis and Hemostasis (ISTH) major bleeding, bleeding requiring blood product transfusion, length of ICU/ hospital stay, and mortality. Data will be analyzed using univariate and multivariate analysis as indicated.

Results: In Progress

Conclusion: In Progress

global: Y

3:40pm – 3:55pm R **Impact of aPTT versus Anti-Xa monitoring of unfractionated heparin during Impella support** Athena I

Moderators: Hania Zaki

Presenters: Seneca Williams

Evaluators: Erin Massarello

Title:

Impact of aPTT versus Anti-Xa monitoring of unfractionated heparin during Impella support

Authors:
Seneca Williams
Lyndsay Gormley
Logan McCulloh
Bryan Love
Jenna Cox

Background:

Receipt of heparin during Impella mechanical circulatory support (MCS) to prevent thromboembolic complications and maintain purge reliability must be balanced with minimizing bleeding risk. Heparin may be administered through the purge solution and intravenously. The device manufacturer recommends the use of heparin via the purge solution and intravenously as needed to attain an activated clotting time (ACT) target of 160 to 180 seconds. A 2019 survey by Reed et. al found that the majority of high-volume Impella institutions across the United States utilized activated partial thromboplastin time (aPTT) monitoring, followed by ACT and anti-Xa. In 2023, anti-Xa 0.2-0.4 IU/mL became the default heparin dosing strategy for patients receiving Impella support at Prisma Health. An aPTT goal of 50-70 seconds was our default strategy prior to this time and remains an option for providers to choose within our current order sets. Outcomes data comparing anticoagulation targets during Impella support are extremely limited.

Methods:

This multicenter, retrospective, cohort study aims to evaluate safety outcomes between aPTT (50-70 seconds) and anti-Xa (0.2-0.4 IU/mL) heparin monitoring strategies in patients receiving Impella support. Adult patients admitted to Prisma Health Richland or Greenville Hospitals between January 1, 2023 to December 31, 2024 who received Impella support for greater than six hours and intravenous heparin were included. Patients were excluded who received non-heparin anticoagulants during Impella support or heparin outside of specified target ranges. The primary outcome is the incidence of bleeding (utilizing major and minor per ISTH criteria). Secondary objectives include comparison of: the incidence of thrombotic events, time to onset of bleeding or thrombotic event, time to therapeutic aPTT or anti-Xa, total heparin exposure, length of Impella support, percentage of laboratory monitoring values (aPTT or anti-Xa, respectively) within target range.

Results:

In-Progress

Conclusions:

In-Progress

global: Y

3:40pm – 3:55pm R **Optimization of Automated Dispensing Cabinets to Reduce Medication Errors in the Emergency Department** Athena H

Moderators: Sarah Blackwell
Presenters: Kelly Bodine
Evaluators: Emily Johnston

Title: Optimization of Automated Dispensing Cabinets to Reduce Medication Errors in the Emergency Department

Authors: Kelly Bodine, PharmD; Aubrey Murphy, PharmD; John Patka, PharmD, BCPS; Laurie Cavendish, PharmD, BCPS; Debbie Vigliotti, PharmD, LSSGB

Objective: To describe the utilization of automated dispensing cabinets to determine the safety of emergency medication dispensing practices and to address modifiable sources of potential medication errors.

Self Assessment Question: How can automated dispensing cabinet usage be modified for safety?

Background: A medication error is a preventable event that may lead to inappropriate medication use or patient harm. Automated dispensing cabinets (ADCs) have eliminated a significant margin of human error; however, safety measures are lessened in the emergency department (ED) to provide for timely treatment of critical patients. Less restricted access, fewer verification checkpoints, and retrospective charting are a few of the barriers to medication safety that exist in the ED. Nationally recognized organizations have recommendations for ADC use to help mitigate safety barriers and risk points. With a variety of individuals accessing ADCs, passing along medications, and providing direct patient care in the Grady Memorial Hospital (GMH) ED, optimized ADC storage and dispensing conditions are needed to ensure best patient care. The purpose of this study was to describe the utilization of ADCs to determine the safety of emergency medication dispensing practices and to address modifiable sources of potential medication errors.

Methods: Retrospective review of ADC utilization and practices in the ED of a single institution between January 1, 2024 and March 31, 2024. Reports were generated for three ADCs located in emergent patient-care areas using software from BD Pyxis™. ADC layouts were evaluated, taking into consideration pocket type and medications contained within the ADC, including high risk and sound-alike-look-alike medications based on ISMP guidance and GMH policies and procedures. Override data was evaluated, including number of overrides, user profession, and medications overridden. Results were utilized to modify and optimize ED ADCs for both safety and efficacy, such as moving medications to an alternative storage pocket type. Interventions were quantified as part of the primary analysis. Secondary analysis included evaluating the impact of any measurable outcomes for modifications made.

Results: 1,375 overrides and 342 medications stored among the 3 Pyxis stations were assessed. This study found that 25% of medications stored were in matrix drawers, however very few were high-risk or SALAD medications. Due to this, minimal changes were recommended to Pyxis storage design. Of the 1,375 overrides, 37% were for high-risk medications. No changes were recommended to overridable medications due to the location of these Pyxis stations. Lastly, few high-risk and SALAD medications were associated with Pyxis safety alerts, and adjustment efforts focused on alert optimization.

Conclusion: This study found that Pyxis station design was previously optimized for safety surrounding high-alert

and SALAD medications. Ultimately, optimization of Pyxis alerts and override warnings were needed to improve safe medication practices.

global: Y

3:40pm – 3:55pm | **Outpatient Parenteral Antimicrobial Therapy Adverse Events for Daptomycin Compared to Vancomycin** Athena A

Moderators: Amy Carr
Presenters: Kristin Lanier
Evaluators: Benjamin Casey

Title: Outpatient Parenteral Antimicrobial Therapy Adverse Events for Daptomycin Compared to Vancomycin

Authors: Kristin Lanier, Jaspaul Jawanda, Allison Cid

Background: Outpatient parenteral antimicrobial therapy (OPAT) is defined as the administration of two or more doses of a parenteral antimicrobial agent outside of the hospital setting. Two commonly used antibiotics are vancomycin and daptomycin for treating gram-positive infections. The administration time of vancomycin is dose dependent and requires monitoring to assess for toxicity and therapeutic response. Daptomycin is administered as an intermittent infusion or an intravenous push. While creatine kinase levels should be monitored, daptomycin does not routinely require therapeutic drug monitoring. In patients where use of either agent would be appropriate, the differences in adverse event rates are unclear.

Methods: A retrospective chart review was conducted between September 1, 2023 through August 30, 2024 at a 400-bed community hospital. Patients that have been treated within the FirstHealth of the Carolinas hospitals and the FirstHealth Infectious Diseases Clinic, that received either vancomycin or daptomycin in the OPAT setting within the 12-month time frame were identified. Patients with end-stage renal disease requiring continuous renal replacement therapy, that died during OPAT, or were pregnant were excluded. Demographic and clinical data was abstracted from the electronic health record. All patient data was in encrypted files with access granted only to investigators. The primary outcome studied was the occurrence of an adverse drug event resulting in a change in antimicrobial therapy or early discontinuation of therapy due to harm or injury. The secondary outcomes included a measurement of time to adverse drug event occurrence and total number of adverse events. The primary outcome was analyzed utilizing a Chi-square test.

Results: Within the study, a total of 175 patients were included with 112 in the daptomycin group and 63 in the vancomycin group. For the primary outcome of early discontinuation of OPAT therapy, there was no statistically significant difference between the daptomycin and vancomycin groups (0.13 vs. 0.14, P = 0.87). The primary reason for early discontinuation in both groups was the occurrence of an adverse event. The daptomycin group demonstrated a shorter time to adverse event occurrence compared to the vancomycin group (12 vs. 30 days).

Conclusions: When comparing the rate of early discontinuation between daptomycin and vancomycin in the OPAT setting, there was no significant difference between groups. These findings suggest either agent may be considered in the OPAT setting depending on patient specific factors. It is likely that utilization of a Bayesian model dosing software in conjunction with a dedicated OPAT clinical pharmacist, resulted in a reduction of adverse events in the vancomycin group.

global: Y

3:40pm – 3:55pm L **COMPARISON OF HIGH-DOSE VERSUS LOW-DOSE SYSTEMIC CORTICOSTEROIDS FOR ACUTE EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN NON-CRITICALLY ILL PATIENTS** Parthenon 2

Moderators: Alexis Pruitt

Presenters: Hanna Condrey

Title: COMPARISON OF HIGH-DOSE VERSUS LOW-DOSE SYSTEMIC CORTICOSTEROIDS FOR ACUTE EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN NON-CRITICALLY ILL PATIENTS

Authors: Hanna Condrey, Alexis Chlada, Sharon Jordan

Practice Site: Grand Strand Medical Center – Myrtle Beach, SC

Background/Purpose: This study aims to compare the outcomes of non-critically ill patients receiving high-dose versus low-dose systemic steroids for acute exacerbation of Chronic Obstructive Pulmonary Disease (COPD).

Methodology: This retrospective cohort study included 2,277 patients aged ≥ 18 years, who were admitted for acute COPD exacerbation and received at least 2 days of any dose of glucocorticoids. Patients were categorized into two groups based on their daily steroid dose: high-dose (> 40 mg prednisone equivalents per day) or low-dose (≤ 40 mg prednisone equivalents per day). The primary outcome was length of stay (LOS). Secondary outcomes included 30-day and 90-day readmission rates, as well as the incidence of hyperglycemia and hypertension during hospitalization.

Results: In-Progress

Conclusions: In-Progress

Disclaimers: This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

global: Y

3:40pm – 3:55pm L **Effect of Bupivacaine Liposome Injectable Suspension Administration in Abdominal Surgery** Olympia 2

Moderators: Brittany White

Presenters: Allison Daneault

Evaluators: Rachel Langenderfer

Title: Effect of Bupivacaine Liposome Injectable Suspension Administration in Abdominal Surgery

Authors: Allison Daneault, John Shadowen, Will Johnson, Elizabeth Oglesby

Objective: Define the efficacy outcomes used for bupivacaine liposome injectable suspension in the studied abdominal surgical population.

Self Assessment Question: Based on the findings of this study, which outcome was reduced in the bupivacaine liposome injectable suspension treatment group?
A. Patient reported pain scores
B. Hospital length of stay
C. Opioid usage

Background: Uncontrolled post-operative pain can lead to an increased need for analgesics and contribute to increased length of hospital stay. Bupivacaine liposome injectable suspension is an extended-release local anesthetic approved to reduce post-surgical pain for up to 72 hours. This study compared outcomes in patients that received bupivacaine liposome injectable suspension versus patients that received another local anesthetic prior to an abdominal procedure. The goal of this study was to determine if there is additional benefit associated with injectable bupivacaine liposome in decreasing opioid use as compared to other local anesthetics.

Methods: A retrospective chart review was conducted comparing surgical patients who received bupivacaine liposome injectable suspension compared to those receiving an alternative local anesthetic. Abdominal surgical patients from April to October 2023 that received injectable bupivacaine liposome prior to the procedure were analyzed to be included in the study. Data from the comparator group were collected from April to August 2016 prior to the utilization of injectable bupivacaine liposome at Mobile Infirmary Medical Center. The primary outcome of this study was to compare the difference in mean morphine milligram equivalents (MME) administered within the first 72 hours after surgery between the two treatment groups. Secondary outcomes included length of hospital stay (LOS), pain scores (12, 24, 48, and 72 hours post-operation) on a numeric 0-10 scale, time to first post-operation bowel movement, discharge opioid prescriptions, and all cause 30-day readmission. Exclusion criteria included non-abdominal procedures, patients with less than a 24-hour hospital stay, outpatient surgeries, and patients that remained intubated for the first 72 hours post-operation.

Results: Each group contained 75 patients amounting to a total of 150 patients in the study sample. 65% of the abdominal surgeries in the injectable bupivacaine liposome group were colectomies compared to 77% of procedures using an alternative anesthetic. 93% of the injectable bupivacaine liposome group underwent robotic surgeries versus 58% of the control group. There was no significant difference in the primary outcome of mean number of MME between the two groups (injectable bupivacaine liposome 69.91 ± 55.26 vs control 74.47 ± 59.01, $p = 0.618$). There was, however, a significant difference found between the average LOS in the injectable bupivacaine liposome group compared to control (111.23 hours ± 67.01 versus 212.52 hours ± 171.21, $p < 0.0001$), which equates to approximately double the LOS for the patients prior to injectable bupivacaine liposome use at Mobile Infirmary. Subgroup analysis of LOS of robotic and laparoscopic procedures also showed a significantly shorter LOS for patients receiving injectable bupivacaine liposome (105.76 hours ± 57 (n = 70)

versus 180.77 hours ± 164.44 (n = 42), p = 0.0007).

Conclusion: Bupivacaine liposome injectable suspension did not exhibit a significant difference in MME utilization in the patients reviewed in this study. However, there was a statistically significant shorter length of hospital stay. A limitation of this study was that the comparator sample was from before injectable bupivacaine liposome was used at Mobile Infirmary, leading to an 8-year gap between the patient groups. In this timeframe, surgical techniques have advanced, and the hospital has instituted enhanced recovery protocols that this study was not able to account for. Further research is needed to account for these variables.

global: Y

3:40pm – 3:55pm L **Evaluation of a Pharmacist-Driven Erythropoiesis-Stimulating Agent Management Protocol for Anemia in Chronic Kidney Disease** Parthenon 1

Presenters: Akua Kuffour

Evaluators: Nick Mastromarino

Authors: Akua Kuffour, Brianna Qualls, Christine Wong, Devon Tousignant

Purpose: Erythropoiesis-stimulating agents (ESAs) are commonly utilized in the management of anemia associated with chronic kidney disease (CKD). Despite the established efficacy of these agents, the Kidney Disease: Improving Global Outcomes (KDIGO) Clinical Practice Guideline for Anemia in CKD recommends that the potential benefits of ESAs should be balanced against the potential risks of ESAs, which include hypertension and thromboembolism. Pharmacists can significantly contribute to the safe and effective use of ESAs through dose adjustments, order modifications, and continuous monitoring. This study aimed to assess the impact of a pharmacist-led ESA management protocol of hospitalized patients with CKD-related anemia.

Methods: This study received an exemption from the Institutional Review Board. Using a quasi-experimental, retrospective comparative design, it assessed utilization of ESAs for anemia in CKD before and after the implementation of a pharmacist-driven management protocol. The pre-intervention group reflected nephrology-driven ESA management of anemia in CKD with data collected from November 01, 2023 to March 30, 2024. A locally approved protocol to provide guidance on pharmacy-led optimal initial ESA dosing, dose adjustments, monitoring parameters, and iron repletion was created with approval by nephrologists and the Pharmacy and Therapeutics Committee. All pharmacists and dialysis nurses were educated regarding the new process and protocol. The post-intervention period reflected pharmacy-driven ESA management of anemia in CKD from December 24, 2024 to February 28, 2025. Data was collected through retrospective chart review, capturing relevant patient information including ESA doses administered, transferrin saturation, ferritin levels, hemoglobin concentrations, hemodialysis status, adverse events, and pharmacist interventions. The primary outcome assessed the incidence of hemoglobin values within target range (10 g/dL – ≤ 11.5 g/dL). Secondary outcomes included the incidence of appropriate iron repletion when indicated, incidence of blood transfusion after ESA initiation and incidence of hemoglobin level > 11.5 g/dL.

Results: A total of 160 patients were included, 83 in the pre-intervention group and 77 in the post-intervention group. For the primary outcome, the incidence of hemoglobin values within the target range (10 g/dL – ≤ 11.5 g/dL) was 14.82% in the pre-intervention group and 21.45% in the post-intervention group ($p < 0.001$).

Compared with the pre-intervention group, the incidence of appropriate iron repletion when indicated was higher in the post-intervention group (17% vs. 57%; $p= 0.003$). The incidence of hemoglobin > 11.5 g/dL occurred in 5.51% in the pre-intervention group and 2.55% in the post intervention group ($p= <0.001$). Blood transfusion after ESA initiation occurred in 1.2% in the pre-intervention group and 3.9% in the post-intervention group ($p= 0.276$).

Conclusion: The pharmacist-driven ESA management protocol for anemia in chronic kidney disease significantly improved the attainment of target hemoglobin levels and appropriate iron repletion. The protocol effectively prevented overcorrection of hemoglobin levels, reducing the risk of adverse cardiovascular events.

global: Y

3:40pm – 3:55pm D **Evaluating the Safety and Efficacy of an Automatic 24-hour Stop Date for Antibiotics in the Treatment of Early-Onset Sepsis in the Neonatal Intensive Care Unit** Athena J

Moderators: Derek Gaul, Jillian Mantione

Presenters: Tyler Tolbert, Tyler Tolbert

Title: Evaluating the Safety and Efficacy of an Automatic 24-hour Stop Date for Antibiotics in the Treatment of Early-Onset Sepsis in the Neonatal Intensive Care Unit

Authors: Tyler Tolbert, Corinne Murphy, McKenzie Hodges, Darryl Wanton Jr.

Background: Early-Onset Sepsis (EOS) remains a significant concern in the neonatal intensive care unit (NICU), necessitating the use of empiric antibiotic therapies. However, prolonged antibiotic exposure is associated with adverse neonatal outcomes including disruption of normal flora, increased incidence of antibiotic resistance, and increased risk for necrotizing enterocolitis. Previous practice included 72 hours of empiric antibiotics for EOS which caused an increase in duration of therapy even though typical pathogens can be identified within 24 hours. Our institution previously had an automatic stop date of 36 hours for EOS antibiotics, but we recently transitioned to an automatic stop date of 24 hours for EOS antibiotics in order to reduce unnecessary drug exposure. This study evaluated the safety and efficacy of implementing a 24-hour automatic stop date for empiric antibiotics in neonates suspected of EOS compared to the previous 36-hour protocol.

Methods: This study was a single-center, retrospective, pre/post-implementation chart review. Neonates receiving antibiotics for EOS were categorized into two groups based on treatment periods: pre-implementation (36-hour protocol) and post-implementation (24-hour protocol). The primary outcome was treatment failure, defined as the resumption of antibiotics within 72 hours of discontinuation. Secondary outcomes included the incidence of necrotizing enterocolitis, mortality, and length of hospital stay. Data on neonatal demographics, antibiotic duration, and clinical outcomes were collected and analyzed. Comparative analyses using chi-squared and t-tests were used to assess statistical significance between the two groups.

Results: For our primary outcome of treatment failure there was no statistical difference in the incidence of treatment failure between a 24 hour automatic stop date and a 36 hour automatic stop date for empiric antibiotics. For our secondary outcomes, late onset sepsis was not observed in either study group during the study period. There was also no statistical difference between the groups when analyzing the incidence of death which occurred in 9% of patients on 24-hour protocol and 10.5% of patients on the 36-hour protocol, or the incidence of necrotizing enterocolitis which occurred in 3% and 5.3% of patients respectively. The average length of stay was also not statistically significant between the groups, but there was a longer average length of stay during the 36 hour protocol time frame.

Conclusion: This study assessed the impact of implementing a 24-hour empiric antibiotic stop date for early-onset sepsis in the Neonatal Intensive Care Unit. The results showed that reducing the duration of empiric antibiotics from 36 to 24 hours was not associated with an increased rate of treatment failure. This is a significant finding because it suggests that a shorter antibiotic duration may be just as effective in ruling out early-onset sepsis while also reducing unnecessary antibiotic exposure.

Contact: tyler.tolbert@piedmont.org

global: Y

4:00pm – 4:15pm

A **Expansion of Pharmacy Services to Improve Patient Care Outcomes and Quality Metrics in a Rural Community Hospital** Olympia 1

Moderators: Saumil Vaghela

Presenters: Andrew Howell

Evaluators: Michael Saxon

Title: Expansion of Pharmacy Services to Improve Patient Care Outcomes and Quality Metrics in a Rural Community Hospital

Authors: Andrew Howell, Stephanie Smith, Kyli Latimer, Johny Nguyen, Grace Kenley

Background: Pharmacists play a key role in the medication outcomes of patients across a variety of health care settings. Equipped with a toolbox of drug knowledge and communication skills, pharmacists are uniquely positioned to be the liaison between patients and medications. Recent studies have supported the idea that regular pharmacist review of patients admitted to the hospital improves patient care outcomes and increases hospital cost savings and quality metrics. The objective of this study is to assess the impact of expansion of pharmacy services on patient care outcomes and hospital quality metrics in a rural, community hospital.

Methods: This is a single center, pre-post implementation study at a 358-bed, community hospital in rural South Carolina. The implementation phase will take place from February 24 – March 21, 2025 and will consist of the placement of pharmacists on the adult medical (non-intensive care unit) floors where most patients have traditionally been managed solely by hospitalists. The duties of the pharmacists placed on the floors will include both distributive and clinical responsibilities, with an emphasis on discharge medication reconciliation and education, renal dose adjustment, anticoagulation monitoring and management, and intravenous to oral (IV to PO) transitioning. Additionally, pharmacists will be responsible for attending multidisciplinary rounds in order to review patients, present recommendations, and assist with medication-related questions and inquiries. Streamlined policies and monitoring aids have been developed to ensure that workflow is consistent and standardized and to help prevent potential confounders. Tools have been developed to assist with documentation of medication interventions and clinical responsibilities. To measure the effect of the intervention on hospital quality measures and patient outcomes, changes in medication areas of Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores and 30-day readmission rates will be assessed both before and after the implementation of the intervention. Secondary outcomes will focus on changes in Leapfrog scores, average length of hospital stay, and time to prescription order verification. Any increase in quality metrics from before to after the implementation will be considered statistically significant.

Results: From February 24 – March 26, 2025, 1046 patients were enrolled in the pilot study. 30-day readmission rates are not yet available since the end of the pilot period. Data from 39 HCAHPS surveys for the month of April are available through April 19, 2025. From March to April, there was an increase in scores for “Communication about Medicines” (March = 68, April = 77), “Discharge Information” (March = 29, April = 92), and “Care Transitions” (March = 38, April = 75). Of note, the domain, “Care Transitions” had its name changed to “Care Coordination” starting in April 2025. For secondary outcomes, Leapfrog and length of stay data for the pilot period is not yet available.

Conclusions: After implementation of the pilot, an increase in HCAHPS scores was observed for all three domains pertaining to medication questions, suggesting that pharmacists may play a role in bettering patients’ perceptions of their care. Pharmacists are well equipped and positioned to assist with transitions of care services.

global: Y

4:00pm – 4:15pm B **Development and Implementation of a Web-based Escape Room with Embedded Principles of Pharmacist Independent Prescribing** Athena C

Moderators: Jonathan Schnider
Presenters: Haley Simkins
Evaluators: Brandon Sucher

Title: Development and Implementation of a Web-based Escape Room with Embedded Principles of Pharmacist Independent Prescribing

Authors: Christy Sherrill, Haley Simkins, Meg Parmelee

Objective: The primary objective of this pilot study is to assess change in pre/post acceptance and knowledge of ambulatory care and pharmacist prescribing, as well as diabetes-related knowledge following educational intervention utilizing a web-based escape room format.

Background: As the plain of education advances, there arises an increased need for the development of new and adaptable teaching strategies to enhance learning outcomes across a variety of platforms that speak to all learning styles and settings. In this current era, we have many advances in technology to employ, including the idea of gamification, which has been identified as a creative strategy to give learners real-life, hands-on experience in a virtual platform. Over recent years, the utilization of the virtual escape room has become a popular educational tool in medical education. In this research study, ambulatory care and pharmacist prescribing are the two key content focuses, and students will be exposed to these concepts through a web-based escape room utilizing diabetes as the clinical topic. This escape room will teach ambulatory care and pharmacist prescribing processes initially in the context of diabetes, with the hopes to expand to other disease states as a “plug and play” option.

Methods: The primary research aims of this study are to assess the impact that simulation using gamification has on student pharmacists’ acceptability and knowledge of the pharmacist’s scope of practice, to investigate the effect of simulation using gamification on student pharmacists’ diabetes-related knowledge and confidence, and to analyze student pharmacists’ perceptions of simulation using gamification for educational purposes. To accomplish these aims, after initial focus group and beta testing, a finalized escape room was piloted among pharmacy students from varying years of study completing didactic coursework on the University of North Carolina Asheville campus and experiential education in the Asheville area. Students completed a pre-survey, then conducted the escape room in 30-minute time slot, followed by a debrief and 10 minute immediate-post survey. Results of the pre and post surveys were analyzed for quantitative and qualitative data. The pre-survey and post-survey contained a 12-item knowledge assessment on diabetes management principles and a 12-item confidence assessment on the principles of independent prescribing. Results were compared pre- and post-escape room activity.

Results: After completing the activity, average scores on the diabetes-related knowledge assessment improved from 76.75% to 89.82%. This was a significant improvement as evidenced by a p-value <0.05 (two-tailed paired t-test). Four questions performed the same pre and post activity. Seven questions performed better post-activity. One question performed worse, with only 4 students answering correctly. Participants answered 7 out of 12 questions 100% correctly post-activity. All questions were answered correctly by at least 80% of students, aside from Q2 as an outlier. In regard to confidence levels, students saw improvement in confidence level on every one of the 12 confidence questions.

Conclusions: Participants in this pilot study saw statistically significant improvement in overall knowledge of diabetes management principles and increases in confidence with regards to principles of independent prescribing immediately after completion of the escape room. Participants overall were happy with the virtual escape room as a fun and more engaging learning platform, citing room for improvement in the usability of the interface, as well as future considerations for expanding the potential uses of the platform.

global: Y

4:00pm – 4:15pm B **Standardization of Inpatient Dashboard Procedure To Impact Quantitative Documentation of Pharmacist Interventions on Bacteremia** Athena D

Moderators: P. David Brackett
Presenters: Brooke Jordan-Brown
Evaluators: Kristina Vizcaino

Title: Standardization of Inpatient Dashboard Procedure To Impact Quantitative Documentation of Pharmacist Interventions on Bacteremia
Author: Brooke Jordan-Brown, Sara Lucas, Landon Johnson

Background:
The Ralph H. Johnson VA Healthcare System (RHJ VAHS) utilizes a decentralized pharmacy practice model. Time constraints limit documentation of pharmacist interventions, which ultimately results in undocumented interventions. An inpatient dashboard was recently created to identify interventions and increase documentation. However, there is no standardized process to incorporate this new tool into pharmacist workflow. Despite recognized benefits of clinical pharmacists, the lack of standardized documentation process limits the visible impact and value that clinical pharmacists contribute to patients. This quality improvement project aims to standardize documentation of pharmacist interventions for bacteremia within the RHJ VAHS.

Methods:
A standardized procedure was developed for utilizing the inpatient dashboard, focusing on antimicrobial stewardship flags. Focus was placed on bacteremia given the significant impact clinical pharmacists can have on optimizing antimicrobials. Interventions were documented through an antibiotic timeout note. Pharmacists were educated on this standardization process in October 2024. The new procedure took effect November 2024. Education emphasized the importance of documenting all antibiotic related interventions. Data was collected on all patients admitted for bacteremia from July 1st, 2024 to February 28th, 2025, with a pre-intervention period from July to October and post intervention period from November to February. The primary endpoint was the change in the quantity of pharmacist interventions for bacteremia following education and implementation of the standardized dashboard procedure. The secondary endpoint assessed the frequency of dashboard use by pharmacists after implementation. Data on hospitalizations for bacteremia (identified by positive blood cultures), bacteremia interventions (identified by bacteremia data points in the EHR) , and dashboard interaction metrics were collected for analysis.

Results:
In the pre-intervention period there was a total of 41 hospitalizations for bacteremia with 18 bacteremia interventions (43.9%). In the post-intervention period there was a total of 52 hospitalizations for bacteremia with 32 bacteremia interventions (61.5%). The change in quantity of pharmacist interventions was not statistically significant (p=0.0903). In the post-intervention period, 90.6% of the bacteremia interventions were through the antibiotic timeout note, while the remaining 9.6% were from the previous methods of documentation. For the secondary endpoint, in the pre-intervention time period, the dashboard view history was 7,575 and in the post-intervention period, the dashboard view history was 5,904, (p= <0.00001). For flag touches with removing/snoozing/resolving, in the pre-intervention period, the total flag touches was 3,540 (31%/17%/52% respectively) and in the post-intervention period, the total flag touches was 2,762 (34%/16%/50% respectively) (p=0.1167).

Conclusion:
Overall, there was no statistically significant increase in quantitative documentation of bacteremia interventions after implementing the standardized dashboard procedure. However, there is a strong signal towards an increase in the number of bacteremia interventions in the post-intervention period, demonstrating that the sample size was likely too small to show statistical significance. In contrast there was a statistically significant decrease in view history of the dashboard, indicating a disconnect in the number of bacteremia interventions and dashboard use. Based off these results, the antibiotic timeout note is likely an efficient method to document bacteremia interventions. The inpatient dashboard is a tool that can assist pharmacists in making interventions, however

methods of documentation may impact the number of interventions more so than utilization of the dashboard.

global: Y

4:00pm – 4:15pm C **Assessment of Intravenous Sotalol Loading Usage in a Veterans Affairs Medical Center** Athena B

Moderators: Elaina Baaklini
Presenters: Justin Barnett
Evaluators: Karen Barlow

Title: Assessment of Intravenous Sotalol Loading Usage in a Veterans Affairs Medical Center

Authors: Justin Barnett, Rebecca Holt, and Cynthia Pohland

Background: Atrial fibrillation (AF) affects up to six million Americans, with approximately 15% of those being veterans. AF can be managed pharmacologically with rate control or rhythm control strategies. Sotalol is a non-selective beta-blocker with potent potassium channel blocking properties and can be used for pharmacological rhythm control. Sotalol is typically initiated in a health care facility capable of creatine clearance calculation, continuous electrocardiographic monitoring, and cardiac resuscitation to ensure safety during the loading phase. Loading with oral sotalol tablets requires at least 3 days in an appropriate health care facility; however, loading with sotalol intravenous (IV) solution can be achieved in 1 day. The purpose of this quality assurance project is to assess the effects of IV versus oral sotalol loading on hospital length of stay in the James H. Quillen VA Medical Center (JHQVAMC) and to assess the facility's initiation of sotalol in accordance with monitoring recommendations to identify areas for improvement in the medication use process.

Methods: This project will identify patients who were initiated on sotalol in the JHQVAMC. Hospital length of stay will be determined as the time from sotalol initiation until the time of discharge. Serum electrolytes (potassium and magnesium), serum creatinine, creatinine clearance, heart rate, QTc interval, and heart rhythm will also be assessed at baseline, during sotalol loading, and after sotalol loading prior to hospital discharge. These electrocardiogram and electrolyte parameters will be evaluated for appropriateness as recommended by manufacturer package labeling, guideline recommendations, and expert opinion for sotalol monitoring.

Results: In progress

Conclusion: In progress

global: Y

4:00pm – 4:15pm R **Assessment of medication therapy for patients presenting to a community hospital emergency department with diabetic ketoacidosis or hyperglycemic hyperosmolar state** Athena I

Moderators: Hania Zaki
Presenters: Madyson Cruse
Evaluators: Erin Massarello

Title: Assessment of medication therapy for patients presenting to a community hospital emergency department with diabetic ketoacidosis or hyperglycemic hyperosmolar state

Authors: Madyson Cruse, Jason Dover, Adrianna T. Reagan, Margaret Williamson, Melissa Bagwell

Learning Objective: Identify areas of improvement in the treatment of patients presenting with diabetic ketoacidosis or hyperglycemic hyperosmolar syndrome

Purpose: Diabetic ketoacidosis (DKA) and hyperglycemic hyperosmolar state (HHS) are potentially life-threatening metabolic conditions that require emergent treatment. As a mainstay of therapy, early fluid resuscitation helps restore intravascular volume deficits, end organ perfusion, and insulin sensitivity. The objective of this study was to assess the overall percentage of patients presenting with DKA or HHS who received an appropriate fluid bolus of 1 to 1.5 L within 2 hours of presentation to the emergency department.

Methods: This is a single center, retrospective chart review of patients treated at East Alabama Health emergency department from October 2023 to April 2024. Patients were included if they were ordered an insulin infusion, had a documented admitting diagnosis of DKA or HHS from the emergency department, and were greater than 18 years of age. Outcome variables collected include patient demographics, baseline labs, time to fluid bolus, fluids administered, time to insulin administration, and if an insulin bolus and/or sodium bicarbonate were administered. Statistical tests, run on SPSS, include descriptive statistics, chi-square for categorical variables, and Kolmogorov-Smirnov to determine if data were normally distributed.

Results: One hundred patients with DKA or HHS were reviewed for this study. For the primary outcome, 82 patients (82%) received an appropriate fluid bolus within 2 hours of presentation to the emergency department. The median time from presentation to administration of a fluid bolus was found to be 51 minutes [IQR: 23-95 minutes] with a median of 1 L bolus administered [IQR: 1-2 L]. Forty-two patients (42%) received an insulin bolus via either subcutaneous (2%) or intravenous (40%) routes, and 16 patients (16%) were administered insulin prior to initial laboratory results. Arterial blood gases, collected on 90 patients (90%), revealed that 6 patients (6.7%) met criteria for classi

4:00pm – 4:15pm R **Evaluation of Clinical Outcomes in Patients with Chronic Obstructive Pulmonary Disease Exacerbations Receiving Systemic Corticosteroids** Athena H

Moderators: Sarah Blackwell
Presenters: Ashley V. Adkins
Evaluators: Emily Johnston

Title: Evaluation of Clinical Outcomes in Patients with AECOPD Receiving Systemic Corticosteroids

Authors: Ashley V. Adkins; Rachel Kile

Objective: Assess outcomes of cumulative corticosteroid dosing ≤ 200 mg compared to > 200 mg in patients admitted with or for AECOPD

Self Assessment Question: What is the most recent GOLD guideline-recommended corticosteroid regimen for AECOPD management

Background:
Systemic corticosteroids have been shown to improve lung function, health-related quality of life, decrease hospitalization duration, need for mechanical ventilation, treatment failure, readmission rates, and dyspnea in patients with acute exacerbations of chronic obstructive pulmonary disease (AECOPD). The Global Initiative for Chronic Obstructive Lung Disease (GOLD) guideline recommends using 40 mg of prednisone equivalent daily for 5 days (200 mg total prednisone equivalents), however, a standard dose of systemic corticosteroids across guidelines does not exist. Optimal doses of systemic corticosteroids for managing AECOPD vary, with prednisone and methylprednisolone commonly used. Both oral and intravenous administration of corticosteroids show similar outcomes regarding treatment failure, relapse, and mortality, with the IV route preferred for severe cases. Similar to dosing, there is no optimal duration of systemic corticosteroids in AECOPD; however, chronic use is generally avoided.

Methods:
A retrospective review was conducted (n=164) to assess the impact of prednisone equivalent dosing less than or equal to 200 mg vs. greater than 200 mg on AECOPD-related outcomes. Patients aged ≥ 40 years who were hospitalized for AECOPD between August 1, 2023, and July 31, 2024, were included in the initial data analysis. Patients were excluded if they were not admitted, transferred from another facility before admission, had baseline or newly diagnosed comorbid lung conditions, left against medical advice, were admitted for hospice, or used corticosteroids in the past 30 days before admission. The primary outcome evaluated mean length of stay (LOS). Secondary outcomes included need for ICU transfer, respiratory failure, mean blood glucose readings >180 mg/dL, requirement of rapid-acting insulin, mechanical ventilation, requirement of supplemental oxygen, inpatient mortality, and 30- and 60-day all-cause readmission rates.

Results:
Of the 164 patients with AECOPD included in the initial analysis, 100 patients met inclusion criteria. The included patients were divided into 2 separate arms: prednisone equivalent dosing ≤ 200 mg (n= 18) vs. > 200 mg (n=82). There were no statistically significant differences between the two arms for baseline characteristics. The primary endpoint showed a statistically significant difference in the mean LOS between the prednisone equivalent dosing ≤ 200 mg vs. > 200 mg (3.56 days vs. 5.56 days, p= 0.0081). There were no statistical differences found between the two arms for secondary endpoints however, there was a numerically significant endpoint, including blood glucose abnormalities >180 mg/dL (27.8% vs. 41.4%). There was a statistically significant difference found between the average total days of inpatient corticosteroid use (3.11 vs. 5.5, p= 0.0029) and the average milligrams of inpatient prednisone equivalents used (149.472 vs. 613.089, p= 0.0001). No statistically significant differences were found between the different corticosteroid types or routes of administration used.

Conclusion:

Eighty-two percent of included patients received cumulative corticosteroid dosing above the GOLD guideline recommendation (> 200 mg prednisone equivalents) without clear evidence showing that conservative dosing ≤ 200 mg prednisone equivalents vs. higher doses > 200 mg prednisone equivalents makes a positive clinical difference on pre-specified outcomes. In conclusion, it is recommended to re-educate providers on the availability of the COPD order set, which limits the use of corticosteroids to GOLD guideline recommendations, and trial a pharmacist-driven intervention report for patients on more than 5 days of corticosteroid therapy when admitted for or with AECOPD. If these changes are implemented, a follow-up assessment would be warranted to compare findings to the same pre-specified outcomes as this review.

global: Y

4:00pm – 4:15pm R **Impact of Maintenance Intravenous Fluid Prescribing in Hospitalized Patients at a Large Community Hospital During a National Shortage** Athena G

Moderators: Erica Merritt
Presenters: Sheniesa N Whitton
Evaluators: Sean Tran

TITLE: Impact of Maintenance Intravenous Fluid Prescribing in Hospitalized Patients at a Large Community Hospital During a National Shortage

AUTHORS: Sheniesa N Whitton, Susan E Smith, Sarah L Cassell, W Anthony Hawkins

OBJECTIVE: Evaluate the changes in prescribing practices related to maintenance intravenous fluids (mIVF) during a national shortage

SELF-ASSESSMENT QUESTION: Based on the point prevalence study, how did prescribing practices change during the IVF shortage?
a.MDs were more likely to prescribe IVF
b.IVF were administered with stop dates
c.IVF were ordered with a documented indication
d.All of the above

BACKGROUND: IVF are among the most prescribed therapies in hospitalized patients. Despite their widespread use, inappropriate prescribing of mIVF remains a concern due to its association with adverse outcomes, including fluid overload, electrolyte imbalances, and increased need for invasive interventions.
IVF therapy has evolved into distinct categories, including mIVF, which is administered to meet daily fluid and electrolyte requirements when oral intake is inadequate. However, data on mIVF prescribing patterns in hospitalized patients, particularly during national shortages, remain limited. The study aims to evaluate the impact of mIVF prescribing both before and during a national shortage.

METHODS: This IRB approved, point prevalence study included all hospitalized adult admitted on November 10, 2023 (before the shortage) and October 10, 2024 (during the shortage). Patients were excluded if they received IVF in the intensive care units (ICU) and emergency department (ED). The prevalence of mIVF was calculated by dividing the number of patients receiving IVF < 333 ml/hr by the total number of patients admitted on the dates of interest. The research team defined IVF as a type of crystalloid that does not contain protein and not used as diluent for medications and mIVF as any fluid running at a rate of < 333 mL/hr. Descriptive statistics were used and chi-square and Mann Whitney was used to determine p-value. P- value of < 0.05 suggest statistical significance.

RESULTS: The prevalence of mIVF use was 31.6% during the shortage compared to 30.7% before the shortage, indicating that overall mIVF use remained relatively stable, with a slight increase of less than 1%. Patients during the shortage were significantly more likely to have an indication documented for IVF administration compared to those before the shortage (60.7% vs. 46.3%, p = 0.011). The proportion of patients with a documented stop date for IVF orders was similar across both time points (58.5% vs. 55.9%, p = 0.661). Normal saline remained the most commonly used IVF during both time points (48.9% vs. 48.5%, p = 0.953), followed by lactated Ringer’s (36.3% vs. 44.9%, p = 0.152). The use of half normal saline was significantly more common during the shortage (5.2% vs. 0.7%, p = 0.030). Regarding prescriber type, MDs were the most frequent prescribers of IVF both during and before the shortage (83% vs. 76.5%), followed by nurse practitioners (6.7% vs. 12.5%) and DOs

(6.7% vs. 1.5%). The distribution of prescriber types differed significantly between time points (p = 0.009). Most patients receiving IVF were also on a diet, with no significant difference between the two dates (87.4% vs. 88.2%, p = 0.587). The proportion of patients receiving diuretics was lower during the shortage (72.7% vs. 87.5%, p = 0.768), though this was not statistically significant. Loop diuretics were the most commonly used in both groups (4.4% vs. 5.1%, p = 0.364).

CONCLUSION: The overall prevalence of mIVF use remained consistent across both time points, with a slight, non-significant increase during the IVF shortage. This suggests an increased awareness and implementation of fluid stewardship practices. These trends, observed in a large community hospital, highlight the potential impact of supply challenges on clinical behavior and documentation practices.

global: Y

4:00pm – 4:15pm | **Evaluation of digoxin dosing and therapeutic drug monitoring in adult patients receiving continuous venovenous hemodiafiltration** Athena A

Moderators: Amy Carr
Presenters: Madison Nordin, Madison Nordin
Evaluators: Benjamin Casey

Title: Evaluation of digoxin dosing and therapeutic drug monitoring in adult patients receiving continuous venovenous hemodiafiltration

Author Names: Madison Nordin, Jenna Cox, Bryan Love, Breanne Mefford

Background: Digoxin is a cardiac glycoside used in the treatment of heart failure and rate control to manage arrhythmias such as atrial fibrillation. The narrow therapeutic nature of digoxin is further complicated by renal dysfunction, leading to accumulation and toxicity, such as nausea, vomiting, visual symptoms (yellow-green discoloration), heart palpitations, bradycardia, and heart block. Currently, there is minimal evidence to guide digoxin dosing in continuous renal replacement therapy. Current recommendations are driven by data from a single case report of a patient administered digoxin while receiving continuous venovenous hemofiltration (CVVH) and expert opinion. The purpose of this study is to investigate the impact of digoxin dosing regimens on therapeutic drug monitoring for patients receiving continuous venovenous hemodiafiltration (CVVHDF).

Methods: This single-system retrospective case study included patients 18 years of age or older admitted to a Prisma Health ICU from September 1, 2019, to September 1, 2024, who received digoxin during CVVHDF. Patients were excluded if they did not have a digoxin level drawn while receiving digoxin and CVVHDF. The primary objective of the study is to describe the impact of digoxin dosing on therapeutic drug monitoring in adult patients receiving CVVHDF. The secondary objective is to determine the safety and tolerability of digoxin for patients receiving CVVHDF by reviewing incidence of bradycardia (HR < 60 bpm) and administration of digoxin immune fab. The primary and secondary objectives will be analyzed using descriptive statistics. Medians and interquartile range (IQR) will be calculated for continuous variables and counts and percentages for categorical variables.

Results: The initial data query yielded 44 patients. Six met criteria for inclusion, with ten levels drawn during CRRT. Half of patients (50%) received digoxin for the indication of heart failure and 66.7% were receiving amiodarone inpatient prior to the initiation of CRRT. The median CRRT effluent rate was 30.7 ml/kg/hr. The median digoxin level was 0.75 ng/mL overall and in patients who had levels drawn >72 hours after the first dose. Over half (80%) of the levels drawn occurred at least 72 hours after the first dose of digoxin. All digoxin levels over 1.2 ng/mL were drawn in patients who only received loading doses and were not started on maintenance regimens. The median total loading dose was 8.9 mcg/kg (using ideal body weight). Loading doses ≥ 8 mcg/kg IBW (n=2) resulted in levels ≥ 1.2 ng/mL, whereas < 8mcg/kg IBW (n=1) resulted in levels < 1.2 ng/mL. Half (50%) of patients received a digoxin load but were not initiated on maintenance regimens. Of the patients that received maintenance therapy, all received 125 mcg every 48-hour regimens. All maintenance dose levels (n=7) on this regimen resulted in levels < 1.2 ng/mL. One-third (33%) of patients experienced bradycardic events while receiving digoxin and CRRT, and no patients received digoxin immune fab.

Conclusion: All maintenance digoxin regimens (n=3) administered were doses of 125 mcg every 48 hours. This maintenance regimen on CVVHDF yielded digoxin levels less than 1.2 mcg/mL. The findings of this study contribute to the paucity of data surrounding appropriate digoxin dosing for patients receiving digoxin while on CRRT, specifically CVVHDF.

global: Y

4:00pm – 4:15pm | **Impact of Concomitant Antibiotic Use on Treatment Outcomes in Patients with Clostridioides difficile Infection Receiving Fidaxomicin.** Athena J

Moderators: Derek Gaul, Jillian Mantione

Presenters: Sonali Chikersal

Title: Impact of Concomitant Antibiotic Use on Treatment Outcomes in Patients with *Clostridioides difficile* Infection Receiving Fidaxomicin.

Authors:Sonali Chikersal, Dahlia Kaiser, Jill Dunning

Background:

Clinical studies have demonstrated increased clinical cure rates in patients receiving fidaxomicin compared to vancomycin with concomitant antibiotics (CAs). However, there is limited evidence on the impact of discontinuing or de-escalating CAs on patients receiving fidaxomicin. This study aims to provide insight on the impact of discontinuation or de-escalation of CAs on treatment outcomes for patients receiving fidaxomicin for CDI treatment.

Methods:

This retrospective cohort study was performed in a muti-site healthcare system from September 26th, 2022, to January 29th, 2025. Electronic medical records were reviewed to identify adult patients hospitalized within AdventHealth Central Florida Division with confirmed CDI and receiving CAs. Key inclusion criteria were age 18 years or older, positive *Clostridioides difficile* toxin test, and receiving one or more CAs for an infection other than CDI at the time of the fidaxomicin order. Key exclusion criteria were fulminant infection and patients who received IV metronidazole or oral vancomycin during the treatment period. Data was collected on patient demographics, comorbidities, antibiotic history, CDI severity markers, mortality, and hospital length of stay. The primary outcome was the rate of treatment success. Secondary outcomes include risk factors for treatment failure, in-hospital mortality, and hospital length of stay.

Results:

In this study, 56 patients met the inclusion criteria. Of this population, 28 (50%) were female, mean age was 67 years old, 8 (14.3%) had a prior episode of CDI, 6 (8.9%) had severe infection, and mean length of stay was 16.2 days. There was no significant difference for the treatment success outcome (100% vs 86.8%; P = 0.164) and mortality (0% vs 2.6%; P = 1.00) between the de-escalation/discontinuation group and CA group, respectively. The length of stay was significantly shorter in the de-escalation/discontinuation group compared to the CA group (6.5 days vs 14 days; P = 0.003). Additionally, there was no significant difference in outcomes of treatment success in patients receiving probiotics (89.4% vs 91.8%; P = 1.00), H2 receptor antagonists (88.9% vs 91.5%; P = 1.00), and proton pump inhibitors (90% vs 91.4%; P = 1.00).

Conclusions:

We did not identify a significant impact on treatment success between groups that had antibiotics de-escalated or discontinued and those who did not. Though, patients who had antibiotics discontinued or de-escalated had a significantly shorter hospital length of stay compared to the patients who received CAs. A larger sample size will be needed to identify the true impact of this incidental finding.

4:00pm – 4:15pm L **Description of a 24-hour Therapeutic Target in Hospitalized Patients with Acute Coronary Syndrome or Atrial Fibrillation Before and After Implementation of a Maximum Initial Weight-Based Unfractionated Heparin Dosing Limit** Olympia 2

Moderators: Brittany White
Presenters: Ivonne Marie Santiago Lopez
Evaluators: Rachel Langenderfer

Tittle: Description of a 24-hour Therapeutic Target in Hospitalized Patients with Acute Coronary Syndrome or Atrial Fibrillation Before and After Implementation of a Maximum Initial Weight-Based Unfractionated Heparin Dosing Limit

Authors: Ivonne Marie Santiago Lopez, Kristen Keen, Justin Hodges, Ruthanne Baird, Catherine L. Wente, Dustin Wilson & Richard Drew
Cape Fear Valley Betsy Johnson Hospital – Dunn, NC

Objective: To describe the rate of 24-hour therapeutic target attainment in hospitalized adult patients ³ 85 kg with ACS or AF receiving UFH before and after implementation of a maximum initial dose protocol.

Self-Assessment Question: What is one reason that dose capping was implemented in this study?

Background: Unfractionated heparin (UFH) is commonly used for anticoagulation in critically ill patients but presents challenges in dosing for those weighing over 100 kg due to altered pharmacokinetics. Conservative dosing practices, such as capping doses, can delay therapeutic target attainment, potentially increasing the risk of adverse outcomes like venous thromboembolism (VTE) and coronary events. This study evaluates the impact of a weight-based, capped UFH dosing protocol on 24-hour therapeutic target attainment and bleeding complications in patients with acute coronary syndrome (ACS) and/or atrial fibrillation (AF)
Methods: This retrospective cohort study reviews medical records from patients admitted to Cape Fear Valley Betsy Johnson and Central Harnett Hospitals between September 2023 and December 2024. Eligible patients (≥ 85 kg with ACS/AF as dose cap begins at this weight) who received UFH were analyzed for the rate of achieving therapeutic levels within 24 hours before and after the implementation of a weight-based capped dosing protocol in May 2024. Secondary outcomes include the incidence of bleeding complications, number of coagulation tests required to achieve therapeutic targets (anti-Xa 0.3 – 0.7 units/mL or aPTT 53 – 73 seconds, and the use of heparin reversal agents. Data were collected via electronic health records (EHR) and analyzed using an intention-to-treat approach with JMP version 17.

Results: The primary outcome of achieving therapeutic anticoagulation at 24 hours was observed in 78% of patients in the control group, compared to 64% in the intervention group (OR 1.09; 95% CI 0.4,2.96). Regarding secondary outcomes, bleeding complications were reported in 7% of the first group and 12% in the second group, with all cases being minor. Protamine was not administered in any of the patients during their hospital stay. The number of coagulation laboratory draws required to achieve therapeutic targets was lower in the control group, with 60% patients needing only one draw compared to 46% in the intervention group.

Conclusions: There was no statistically significant difference between the groups in achieving therapeutic targets at 24 hours. While no major bleeding events occurred in either group, the intervention group had a higher incidence of minor bleeding. Additionally, neither group required protamine for reversal. These findings suggest that, overall, both treatments were safe, but further research with a larger sample size is needed to better understand the true impact of the intervention.

global: Y

4:00pm – 4:15pm L **Evaluating the Safety and Efficacy of DOACs in Obese Patients with Venous Thromboembolism**
Presenters: Cherith Blair Parthenon 1
Evaluators: Nick Mastromarino

Evaluating the Safety and Efficacy of DOACs in Obese Patients with Venous Thromboembolism

Cherith Blair, Valana Vannoy, Khushbu Patel

Background/Purpose:

Venous Thromboembolism (VTE) is a major public health issue, affecting about 900,000 people annually in the United States, and is the leading preventable cause of in-hospital mortality. Current guidelines recommend direct oral anticoagulants (DOACs) over vitamin K antagonists, like warfarin, for VTE due to their favorable pharmacokinetic profile, fewer interactions, and lack of routine monitoring. However, the safety and efficacy of DOACs in patients with extreme body weight remain uncertain. Obesity, defined as body mass index (BMI) ≥ 30 kg/m2, is a known risk factor for VTE, with mechanistic links to venous stasis, endothelial dysfunction and hypercoagulability. Despite this, obese individuals have been underrepresented in major randomized controlled trials that assess the efficacy of DOACs in treating VTE, leading to uncertainties regarding optimal anticoagulation.

In 2016, the International Society of Thrombosis and Haemostasias (ISTH) recommended warfarin over DOACs for patients with a BMI ≥ 40 kg/m2 or weight ≥ 120 kg due to concerns of reduced drug exposure with fixed dose DOACs. Though pharmacokinetic data suggest that obese patients may achieve therapeutic levels with DOACs, more clinical evidence is needed for definitive recommendations in this patient population. In 2021, ISTH updated their stance to recommend DOACs in all patients regardless of BMI, however clinical evidence in severely obese populations remains limited. This study aimed to evaluate the safety and efficacy of DOACs in obese patients compared to non-obese patients being treated for VTE at Emory Decatur Hospital.

Methods:

This was a single-center, IRB-approved, retrospective study conducted from October 2022 through November 2024. Patients were included if they were ≥18 years of age, diagnosed with a VTE and treated with a DOAC. Patients were excluded if they were on anticoagulation for any other indication. Patients were stratified into morbidly obese and non-morbidly obese patient groups. Morbid obesity was defined as BMI ≥40 kg/m2 or weight ≥ 120 kg. The primary outcome was the incidence of recurrence of VTE within 12 months. Secondary outcomes included all-cause mortality, VTE-related mortality, and length of stay. Safety outcomes include major bleeding events, clinically relevant non-major bleeding events and adverse drug reactions.

Results:

The incidence of recurrence of VTE within 12 months occurred in 7.3% of patients in the BMI <40 kg/m2 group (n=4) and 2% of patients in the BMI ≥40 kg/m2 group (n=1) (OR 0.26, 95% CI [0.027-2.46], p-value 0.367). There was one death from all-cause mortality in the BMI ≥40 kg/m2 group and no deaths occurred in the BMI <40 kg/m2 group (p-value 0.47). No VTE related mortality was observed. The median length of stay was 50.5 hours in BMI < 40 and was 51.8 hours in the BMI ≥40 kg/m2 group (p-value 0.44). Major bleeding events occurred in 5% of patients in the BMI <40 kg/m2 group (n=3), while 6% of patients had major bleeding events in the BMI ≥40 kg/m2 group (n=1) (OR 1.13, 95% CI [0.217-5.88], p-value 1). Non-major bleeding events occurred in 12% of patients in the BMI < 40 kg/m2 (n=7) and in 6% of patients in the BMI ≥40 kg/m2 (n=3).

Conclusion:

The use of DOACs in patients with morbid obesity may be a safe and effective option for VTE treatment, with no

observed increase in recurrent VTE or bleeding events. However, larger randomized controlled trials are needed to fully evaluate their efficacy and safety in this population.

global: Y

4:00pm – 4:15pm L **Evaluation of Outpatient Parenteral Antimicrobial Therapy (OPAT) in a Community Healthcare System** Parthenon 2

Moderators: Alexis Pruitt

Presenters: Giovanna Brannon

Title: Evaluation of Outpatient Parenteral Antimicrobial Therapy (OPAT) in a Community Healthcare System

Authors: Giovanna Brannon, Chris Whitman, Rachel L. Foster, Kelly Huff, Nichole Moore, Charles Hartley

Objective: Describe the pharmacist's role in OPAT management, such as review of antimicrobial selection and adverse event monitoring, to optimize patient safety and reduce hospital readmissions

Self Assessment Question: What are potential risk factors associated with unplanned healthcare events that pharmacists can identify in patients receiving OPAT?

Background: Outpatient parenteral antimicrobial therapy (OPAT) enables patients to complete extended courses of antimicrobial treatment for serious infections at home or in a step-down facility following hospital discharge. OPAT discharges require a multidisciplinary and well-coordinated approach. The Infectious Diseases Society of America OPAT guidelines recommend all patients should have infectious diseases (ID) experts review prior to initiation of OPAT. Prior studies have shown improved patient safety, improved patient outcomes, and reduction in healthcare costs when ID-trained pharmacists are involved. No formal OPAT program exists at this hospital system. The purpose of this study is to evaluate the OPAT prescribing and management practices across the Infirmary Health system (IHS) in order to understand factors associated with hospital readmissions and improve patient safety and efficiency through streamlining and standardizing the OPAT discharge process.

Methods: In this retrospective epidemiological cohort study, data was collected on patients at least 19 years of age who were discharged with orders to receive parenteral antimicrobials between May 1, 2023 and April 30, 2024. Patients meeting any of these three criteria were screened for inclusion: 1) Discharge order for an intravenous antimicrobial, 2) Order for vascular access for intention of OPAT, or 3) Case management order containing specific OPAT orders. Patients were excluded if they completed the entire planned OPAT course prior to hospital discharge. The primary outcome is the rate of unplanned healthcare events within 30 days of completing OPAT therapy. The secondary outcomes include qualitatively describing the OPAT patient population, hospital length of stay, and 30-day mortality. A sub-group analysis was conducted to evaluate risk factors associated with unplanned healthcare events.

Results: There were 1244 patients who received OPAT during the study period; 101 patients were included in the final analysis after randomization. The median age of patients included was approximately 63 years old (IQR 52-73). The most common infectious diagnoses were osteoarticular (30%), skin and skin structure (18%), endovascular (16%), urologic (16%), and complicated intra-abdominal (14%). Ceftriaxone and vancomycin were the most commonly prescribed antimicrobials. Of the 101 patients evaluated, 42 experienced a 30-day unplanned healthcare event. Of these 42 patients, 25 (60%) of the unplanned healthcare events were OPAT or infection related.

Conclusion: OPAT patients experienced a high rate of 30-day unplanned healthcare events. Opportunities exist within our healthcare system to improve the OPAT workflow and to enhance safety and efficiency. The results of this study demonstrate the opportunity for our healthcare system to implement a formal multidisciplinary OPAT inpatient review program. This would include ID-trained pharmacists who will review OPAT orders and provide treatment recommendations regarding OPAT modality, antimicrobial selection, outpatient safety and efficacy monitoring, and patient counseling.

global: Y

4:20pm – 4:35pm A **Implementation of an Internal Inventory Integrity Team within a Community Health System** Olympia 1

Moderators: Saumil Vaghela
Presenters: Maura Rodriguez
Evaluators: Michael Saxon

Title: Implementation of an Internal Inventory Integrity Team within a Community Health System

Authors: Maura Rodriguez, Heath Jennings, Craig MacDonald, Bradley Morgan

Objectives:
- Discuss the benefits of appropriate hospital pharmacy inventory management.
- Determine important operational outcomes of an internal inventory team.
- Identify opportunities for future research and ways to expand inventory services.

Self-Assessment Question: True or False: When conducting inventory services, it is essential to consider the size and model of the central pharmacy, the inventory software and equipment utilized, the qualifications and training of personnel, and the timing of the inventory process.

Background: Appropriate inventory management is critical for maintaining regulatory requirements, patient safety, financial forecasting, and integrity of pharmacy operations within a health system. While specific statistics on the exact number of health systems that utilize outsourced inventory vendors for pharmacy product counts are not readily available, it is known that outsourcing various pharmaceutical services, including inventory management, is an established practice in the healthcare industry. Many health systems are adopting this practice to improve efficiency, accuracy, and cost-effectiveness. This study aims to determine whether a difference exists in inventory accounting practices with implementation of an internal inventory integrity team.

Methodology:
This study employed a mixed-methods, phase-based approach to evaluate the implementation of an internal inventory integrity team within a ten-facility community health system. Quantitative analysis was performed through the implementation of an internal team. A small sample of cycle count audit data was collected from central pharmacies of varying sizes and models over two separate three-day periods. Audits immediately preceded the biannual inventory period conducted by the outsourced service provider in August and November of 2024. Primary outcomes and tracked metrics included inventory accuracy, timing of inventory counts, personnel requirements, and discrepancies in inventory records. The study utilized perpetual inventory workflow management software as a comparator group for internal and external inventory count accuracy rates.
Descriptive statistics were employed to compare audit data collected via convenience sampling for the August audit and purposive sampling for the November audit. The focus was on timing, accuracy, and the complexity of inventory across different pharmacy models.
Predictive modeling was utilized to estimate labor required for comprehensive counts across two different central pharmacy models of varying sizes. This will be used to validate audit time accuracy derived from the initial data. The timing and accuracy of inventory processes were monitored, with an emphasis on time validation and personnel requirements for timely completion.
Financial impact was reviewed for the implementation of the internal inventory integrity team. These projections accounted for expected program costs including salaries as well as capital and operational expenses to complete a full internal inventory count across all facilities. Expected program savings and net savings was forecasted utilizing the relative value unit developed through the time analysis which was based on inventory size and complexity.

Results:
The internal team had higher accuracy rates than the external vendor in Phase 1A (89.7% vs. 85.8%), Phase 1B (86.8% vs 72.1%), and Phase 2 (81.9%). Baseline inventory management system accuracy rates decreased

from Phase 1A (11.4%) to Phase 1B (9.4%) and corrected inventory management system discrepancies increased from Phase 1A (7.0%) to Phase 2A (8.1%). External accuracy dropped significantly from 85.8% to 72.1%, respectively during Phase 1A to Phase 2B.
A team of up to five members (1.21-5.04 FTE) would be required to count all sites within a three-day period to ensure accuracy, precision of inventory counting and external industry competitors. Upcoming Phase 3 cost projections for a full internal inventory supported count provides a net savings of $123,200.

Conclusion:
Internal accuracy was higher and more consistent than the external vendor but there is still a need to identify how to improve inventory management system accuracy rates. Time analysis revealed that experienced technicians and buyers were most efficient, and a team of two to five members is required for accurate inventory counting at various facilities. Financially, using an internal team for inventory services is more cost-effective and time-efficient than relying on external vendors and implementing an internal inventory team would provide a net savings of $123,200. Further research will focus on system wide perpetual inventory with reliable real-time inventory management system count accuracy for quality assurance and process improvement.

global: Y

4:20pm – 4:35pm B **Optimization of Pharmacist Interventions for a Health Equity Initiative to Improve Hypertension Control in African American Patients** Athena D

Moderators: P. David Brackett

Presenters: Katie Sfirlea

Evaluators: Kristina Vizcaino

Title: Optimization of Pharmacist Interventions for a Health Equity Initiative to Improve Hypertension Control in African American Patients

Authors: Katie Sfirlea, Rachel Shelley, Luke Van Ausdall, Madison Yates

Objective: Describe the optimization of pharmacist interventions for a health equity initiative to improve hypertension control in African American patients

Self Assessment Question: What outcomes occurred as a result of the optimization of pharmacist interventions for African American hypertension control?

Background: The disparity between hypertension control in African American patients compared to White patients is a major health equity concern in the United States. At Cone Health, baseline data indicated a 6% gap in hypertension control between African American and White patients. From October 2022 to September 2023, implementation of a systemwide health equity goal resulted in improvement in African American hypertension control for patients seen by Cone Health primary care providers. To remain committed to health equity, beginning in October 2023 a new systemwide goal was created to obtain hypertension control for 71.4% of African American patients seen by any Cone Health provider. A previous project utilized a pharmacist-led initiative where all African American patients with uncontrolled hypertension at Cone Health Community Health and Wellness Center (CHWC), an internal medicine clinic, were referred to the embedded Clinical Pharmacist Practitioner (CPP) for medication management. In 45% of the CPP visits no medication changes were made due to the patient's non-adherence to antihypertensives prior to the visit or being out of refills. A nurse blood pressure (BP) visit referral was added to the protocol to allow the CPP to focus on patients requiring more complex medication management. The purpose of this project is to assess hypertension control in African American patients prior to implementation of the new systemwide health equity goal (pre-intervention) as compared to post-intervention.

Methods: This single center, retrospective, IRB-reviewed and exempt, cohort study included African American patients initially seen by the CPP at CHWC for hypertension from October 1, 2023, to August 31, 2024, with follow up visits until September 30, 2024. Exclusion criteria included end-stage renal disease, dialysis, renal transplant, pregnancy, hospice, or palliative care. The primary outcome was the proportion of African American patients seen at CHWC with hypertension control pre-intervention as compared to post-intervention. Hypertension control was defined as BP <140/90 mm Hg at the last ambulatory visit during the study period. Secondary outcomes include patients seen by the CPP with hypertension control (baseline, last CPP visit, and end of study), average change in blood pressure, number of nurse and CPP visits, adherence to CPP referral protocol, and type of medication adjustments made by the CPP. Chi-square and descriptive statistics were used to analyze the data as appropriate.

Results: During this study, 72.1% (n=881) of African American patients seen at CHWC for hypertension achieved hypertension control post-intervention as compared to 62.3% (n=716) pre-intervention for a risk ratio 1.16, 95% CI (1.09-1.23), p<0.001. Of the 119 patients seen by the CPP, 73.1% achieved hypertension control by their last CPP visit. Patients seen by the CPP had an average decrease of 17 mm Hg in systolic blood pressure and 7 mm Hg in diastolic blood pressure. The referral protocol was followed for 70.5% of patients with only 17 patients having a nurse BP visit. The average number of CPP visits per patient overall was 1.76 and 1.57 for patients with controlled hypertension. During the study, 10.1% (n=12) of patients were lost to follow up.

Conclusions: African American hypertension control at CHWC was significantly improved post-intervention as compared to pre-intervention despite low utilization of nurse BP check visits. These results are consistent with a previous pharmacy resident project at CHWC that demonstrated significant improvements in African American hypertension control amongst patients managed by the CPP. Based on these results we will continue to optimize implementation of the nurse BP visit referral protocol and evaluate the feasibility of continued targeted hypertension follow up after hypertension control is achieved.

global: Y

4:20pm – 4:35pm B **Retrospective Review of Dual CGRP Targeted Treatment Regimens for Acute and Preventive Treatment of Migraines** Athena C

Moderators: Jonathan Schnider
Presenters: Amanda Forrest
Evaluators: Brandon Sucher

Title: Retrospective Review of Dual CGRP Targeted Treatment Regimens for Acute and Preventive Treatment of Migraines

Authors: Amanda Forrest, Alison Martin, Dallin Billow

Objective: The purpose of this project will be to assess the safety and efficacy of dual CGRP-targeting therapies for the use in preventive and acute migraine treatment in a Veteran population.

Self-Assessment Question:
KJ is a 35 yo F experiencing severe, frequent migraines. Her past medical history includes CAD and DM. Currently she is complaining of 20 migraine days per month, with an average pain intensity of 7-9/10. She is currently utilizing erenumab 70 mg SC monthly for migraine prevention with limited benefit. She comes to your clinic requesting something for acute treatment. Which of the following would you recommend?

- Ubrogepant 100 mg as needed
- Atogepant 60 mg daily
- Sumatriptan 100 mg as needed
- None of the above since she has CAD and is already taking a CGRP targeting medication

Background:
Several medications targeting calcitonin gene-related peptide (CGRP) have been approved for acute treatment and prevention of migraines. Controversy exists in utilizing the concomitant use of these agents given their similarities in mechanism, and limited data to support concurrent use. Current guidelines/position statements recommend these medications given their established efficacy, but do not address using them concurrently. Limited literature is available to assess their current place in therapy when used concomitantly.

Methods:
This project was a medication use evaluation, utilizing electronic patient prescribing records and retrospective chart review. The primary objective was to assess the safety of dual CGRP-targeting therapies when used in combination for the prevention and acute treatment of migraines. Secondary exploratory objectives sought to assess the efficacy of these combination treatment regimens. Patients were included if they had a documented diagnoses of migraine and were concomitantly using a preventive CGRP-targeting regimen and gepant for acute migraine treatment between April 1, 2023 and January 15, 2025. Patients were excluded if they no longer received care from the VA healthcare system or the VA neurology team. Safety and efficacy outcomes were collected via retrospective chart review and analyzed and reported using descriptive statistics.

Results:
Of the 96 patients screened, 89 were included in the final analysis. Majority of patients were female (60.7%), with a mean age of 46.8 years and had a diagnosis of chronic migraines (75.3%). 149 unique dual CGRP targeting regimens were identified and included in the safety analysis, 59 of which were eligible for the exploratory efficacy analysis. 14 regimens were excluded from the efficacy analysis, leaving a total of 45 regimens included in the efficacy analysis. No new and or concerning adverse reactions were identified. Only 7 adverse drug reactions were reported in total per subjective patient reporting. There was no median change in migraine intensity or duration found in the efficacy analysis (0.0, p=0.184, 0.0, p=.917 respectively). Subjectively, 10 patients on dual CGRP therapy reported the addition of a gepant for acute treatment was effective, 20 reported ineffective and 29 had a lack of documentation.

Conclusions: The use of concomitant dual CGRP targeting agents for migraine treatment and prevention, appear safe and well tolerated. Efficacy data was limited in this study and more large scale, randomized controlled trials are needed to fully assess this endpoint.

global: Y

4:20pm – 4:35pm C **Impact of Prior Beta-Blocker Use on Antihypertensive Escalation in Acute Ischemic Stroke** Athena B

Moderators: Elaina Baaklini
Presenters: Shivani Patel
Evaluators: Karen Barlow

TITLE: Impact of Prior Beta-Blocker Use on Antihypertensive Escalation in Acute Ischemic Stroke

AUTHORS: Shivani Patel PharmD, Kirbie Wells PharmD

OBJECTIVE: To identify the impact of home beta blocker use and its effect on labetalol for achieving blood pressure targets prior to administration of tissue plasminogen activator (tPA) in acute ischemic stroke patients at a rural community hospital.

SELF ASSESSMENT QUESTION: What is the primary clinical concern when managing blood pressure in acute ischemic stroke (AIS) patients who are on beta-blocker therapy at home prior to alteplase (tPA) administration?
A) Increased risk of hemorrhagic transformation due to excessive blood pressure lowering.
B) Potential need for escalation to alternative antihypertensive agents after labetalol.
C) Decreased efficacy of thrombolytic therapy due to beta-blocker-induced vasoconstriction.
D) Higher likelihood of spontaneous blood pressure normalization without intervention.

BACKGROUND: Stroke is a leading cause of mortality and disability in the U.S., with the highest burden in the Southeastern "stroke belt," where rural areas like Southwest Georgia face barriers to specialized care. In acute ischemic stroke (AIS), timely blood pressure control is crucial before alteplase (tPA) administration to reduce the risk of hemorrhagic transformation. The AHA/ASA recommends lowering systolic BP to <185 mmHg and diastolic BP to <110 mmHg using labetalol, hydralazine, or nicardipine, without specifying a preferred agent. However, prior beta-blocker use may reduce labetalol’s effectiveness due to beta-adrenergic receptor downregulation, necessitating escalation to other agents. This study evaluates whether outpatient beta-blocker use influences the need for additional antihypertensive therapy in AIS patients, potentially guiding personalized stroke management strategies.

METHODOLOGY: This study was a retrospective chart review which included adult patients diagnosed with acute ischemic stroke who had an initial SBP >185 mmHg or DBP >110 mmHg and received labetalol for blood pressure control prior to tPA administration treated at Phoebe Putney Memorial Hospital (PPMH) from January 2019 to December 2023. Patients were excluded if they were pregnant or transferred from another healthcare institution.

RESULTS: A total of 199 patients were included: 65 with prior beta-blocker (BB) use and 134 without. The prior BB group was slightly younger (62 vs. 64.8 years) and heavier (96.6 vs. 83.2 kg). Stroke severity was similar between groups, with the prior BB group having a slightly higher percentage of severe strokes (15.4% vs. 12.7%). More patients with prior BB use required additional antihypertensives (37.5% vs. 19%). The interquartile range for door-to-needle time was 30.5–69 minutes, and for blood pressure control, 19.4–58.3 minutes. Severe hypotension occurred in 4.6% of the prior BB group and 9.7% of the no BB group. Intracerebral bleeding occurred in 6.2% of the prior BB group and 3.7% of the no BB group.

CONCLUSIONS: Patients on prior beta-blockers were more likely to require escalation to nicardipine or hydralazine for blood pressure control before Alteplase administration. These findings suggest that prior beta-blocker use may reduce the effectiveness of labetalol, necessitating a more individualized approach to antihypertensive management. Future studies should explore whether alternative first-line strategies could improve blood pressure control efficiency and minimize complications, particularly in resource-limited settings.

global: Y

4:20pm – 4:35pm R **Comparison of Clinical Outcomes in Hospitalized Patients Receiving Olive Oil-Based versus Soybean Oil-Based Lipid Emulsions with Parenteral Nutrition** Athena H

Moderators: Sarah Blackwell

Presenters: Tilyn Digiacomo

Evaluators: Emily Johnston

Title: Comparison of Clinical Outcomes in Hospitalized Patients Receiving Olive Oil-Based versus Soybean Oil-Based Lipid Emulsions with Parenteral Nutrition

Authors:
Tilyn Digiacomo
Chris Wilson
Breanna Carter

Background: Intravenous lipid emulsions are an integral component of parenteral nutrition for the provision of essential fatty acids, linoleic acid and alpha-linolenic acid. Given the pro-inflammatory properties of linoleic acid, the advantage of linoleic-sparing formulations has been debated. Olive oil-based lipid emulsions contain one-third the amount of linoleic acid compared to its soybean oil-based counterpart, making its use potentially advantageous in critical illness, infection, and liver injury. Despite its vital role in parenteral nutrition, recommendations regarding the optimal lipid emulsion formulation are lacking. This study aims to compare clinical outcomes in patients receiving olive oil-based versus soybean oil-based lipid emulsions as a component of parenteral nutrition.

Methods: This was a single-center, retrospective, cohort study that included adult patients hospitalized at a large academic medical center. Patients had to be 18 years of age or older with confirmed receipt of either olive oil-based or soybean oil-based lipid emulsion as a component of parenteral nutrition. Patients were excluded from the study if they were receiving parenteral nutrition prior to hospitalization, duration of parenteral nutrition was less than three days, patients received both lipid emulsions, cirrhosis was noted on imaging or past medical history, baseline serum bilirubin was greater than 2 mg/dL, or baseline serum triglycerides were greater than 400 mg/dL. The primary endpoint of this study was parenteral nutrition-associated liver disease, defined as total bilirubin greater than 2 mg/dL or any of the following greater than 1.5 times the upper limit of normal in accordance with institution-specific values: aspartate aminotransferase, alanine transaminase, or alkaline phosphatase. Secondary outcomes include the incidence of hospital-acquired bloodstream infection, hypertriglyceridemia, and length of stay. Nominal data was analyzed utilizing Chi-square or Fisher’s exact test. Continuous data was analyzed utilizing Wilcoxon Rank Sum or Student’s t-test.

Results: In total, 200 patients were included in the final analysis with 100 patients in each group. The majority of patients were receiving parenteral nutrition for ileus or small bowel obstruction for a median duration of 8 to 9 days, respectively. Baseline demographics, including intensive care unit admission and mortality, were similar between groups. Parenteral nutrition-associated liver disease occurred in 35 patients in the olive oil-based group compared to 28 in the soybean oil-based group (35% vs. 28%; P = 0.29). There was no difference in hypertriglyceridemia, hospital-acquired bloodstream infection, or length of stay observed between lipid emulsions.

Conclusion: Among hospitalized patients receiving parenteral nutrition, there was no difference in the rate of parenteral nutrition-associated liver disease when comparing olive oil-based versus soybean oil-based lipid emulsions. Moreover, no difference in hypertriglyceridemia, length of stay, or hospital-acquired bloodstream infections were observed between groups. Study findings may be explained by confounding medications, critical illness, or shorter durations of parenteral nutrition. Future research should aim to examine similar outcomes among longer durations of parenteral nutrition.

global: Y

4:20pm – 4:35pm R **Evaluating the Safety and Efficacy of Thombolytics in the Setting of Cardiac Arrest** Athena I

Moderators: Hania Zaki
Presenters: Elliott Wilch
Evaluators: Erin Massarello

Title: Evaluating the Safety and Efficacy of Thombolytics in the Setting of Cardiac Arrest

Authors: Elliott Wilch and Derrick Clay

Background: Cardiac arrest refers to circulatory collapse that results in cessation of cardiac function that is either restored by resuscitative efforts or results in cardiac death. Each year there are over 350,000 out of hospital cardiac arrests, which is associated with poor outcomes with only 10.6% of patients surviving to hospital discharge. Cardiac arrest is typically managed with standard resuscitative modalities such as advanced cardiac life support (ACLS). Thrombolytic agents, such as tenecteplase and alteplase can be used in conjunction with ACLS to help restore circulation by initiating fibrinolysis in cardiac arrest due to pulmonary embolism or coronary thrombosis. Data surrounding the use of thrombolytic agents in the setting of cardiac arrest is lacking. Studies have found varying results surrounding outcomes such as survival to hospital discharge and return of spontaneous circulation. Regardless of the lack of definitive data surrounding thrombolytics in cardiac arrest, both the American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care and the European Resuscitation Council Guidelines for Cardiac Arrest in Special Circumstances recommend their use in this setting. The following study will be conducted to assess the safety and efficacy of thrombolytic agents in the setting of undifferentiated, out of hospital cardiac arrest.

Methods: This is a single-center, retrospective cohort study assessing the safety and efficacy of thrombolytics in the setting of cardiac arrest. Patients 18 years or older with the primary diagnosis of cardiac arrest who received an IV thrombolytic agent were included in the study. Patients were excluded if they were pregnant or incarcerated. The group of patients who received a thrombolytic agent during cardiac arrest was then. compared to a historical control group of similar demographics. The primary outcome was return of spontaneous circulation. Secondary outcomes included survival to hospital admission, survival at 24-hours, survival to hospital discharge, and neurologically intact survival defined as a Modified Rankin score of less than or equal to two. Safety outcomes included major and minor bleeding complications.

Results: Among the 144 patients initially reviewed, thirty-two patients did not meet the inclusion criteria for various reasons. Of the 112 patients included in the study, forty-three were assigned to the thrombolytic group and sixty-nine to the no thrombolytic group. The primary outcome, ROSC, for the intervention group versus control group was 32.6% and 53.6% respectively (P=0.029). The results for the thrombolytic group versus no thrombolytic group for secondary outcomes of survival to hospital admission (16.3% vs 31.9%, p=0.067), survival at 24-hours (11.6% vs 15.9%, p=0.526), survival to hospital discharge (4.7% vs 2.9%, p=0.637) and neurologically intact survival (4.7% vs 2.9%, p=0.637) were also calculated.

Conclusion: When examining the use of thrombolytics in the setting of cardiac arrest, the primary outcome was achieved at a higher rate in the group who did not receive a thrombolytic agent. It is important to note that this trial was underpowered due to limited patient enrollment, primarily attributable to the lack of thrombolytic usage during cardiac arrest. While this trial may not have shown a benefit of thrombolytics in the primary and secondary outcomes, the American Heart association and European resuscitation council guidelines for cardiac arrest recommend early administration of thrombolytics as opposed to late. In this study, the average time from presentation to thrombolytic administration was 17.4 minutes indicating that thrombolytics were potentially used as a last line effort in the setting of cardiac arrest, leading to the outcomes seen in this study.

ewilch@srhs.com

global: Y

4:20pm – 4:35pm R **Evaluation of the current state of burnout among clinical pharmacists** Athena G

Moderators: Erica Merritt
Presenters: Sydney Kisala
Evaluators: Sean Tran

TITLE: Evaluation of the current state of burnout among clinical pharmacists
AUTHORS: S Kisala, S Boyko, R Hollis, K Quairoli, S Ye, A May
OBJECTIVE: Determine the current prevalence of burnout and demographic characteristics among clinical pharmacists.
SELF-ASSESSMENT QUESTION: What is the current prevalence of burnout among clinical pharmacists?
BACKGROUND: The World Health Organization (WHO) categorized burnout as a syndrome officially added to the International Classification of Diseases, 10th revision (ICD-10) compendium in 2019. Burnout is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. The COVID-19 pandemic has significantly altered the healthcare landscape, potentially impacting burnout levels. While it has been widely studied among healthcare professionals, research on clinical pharmacists and clinical pharmacy specialists remains limited. It is still being determined if the unique challenges clinical pharmacists face during and after the pandemic have influenced the prevalence and severity of burnout in this group.
METHODOLOGY: This cross-sectional descriptive survey examined burnout among clinical pharmacists and clinical pharmacist specialists in the United States. Eligible participants were full-time pharmacists spending over 50% of their time in direct patient care, while those with less than one year of experience post-training or in part-time roles were excluded. A survey, developed using validated demographic and burnout assessment tools, including the Maslach Burnout Inventory (MBI), was reviewed by a focus group for clarity. Distribution initially targeted the Vizient Pharmacy Network but expanded to include the American Society of Health-System Pharmacists (ASHP) to ensure broader reach. The survey remained open from August 1 to September 19, 2024, with weekly reminders posted. Burnout was assessed using MBI-defined thresholds for emotional exhaustion, depersonalization, and personal achievement, with demographic and job-specific factors examined as potential contributors. Descriptive statistics summarized participant characteristics, and chi-square tests, along with odds ratios, were used to assess associations between burnout and relevant factors, with statistical significance set at $p < 0.05$.
RESULTS: A total of 401 clinical pharmacists met the inclusion criteria and completed the survey, with most respondents being female (77.6%), white (82.8%), and having over 10 years of experience (65.3%). The overall burnout rate was 78%, with 30% of participants reporting high emotional exhaustion, 62% high depersonalization, and 54% low personal accomplishment. Burnout was present in one, two, and all three dimensions in 29%, 30%, and 19% of respondents, respectively. Emergency medicine pharmacists exhibited the highest burnout rates (94%), with 47% experiencing high emotional exhaustion, 81% high depersonalization, and 75% low personal accomplishment. Conversely, ambulatory care pharmacists exhibited lower rates of burnout (68%) overall, with 18% experiencing high emotional exhaustion, 55% high depersonalization, and

34% low personal accomplishment. Work

global: Y

4:20pm – 4:35pm | **Impact of a Provider Specific Antimicrobial Utilization Report on Prescribing Practices at a Community Hospital** Athena A

Moderators: Amy Carr
Presenters: Maks Lutsenko, PharmD
Evaluators: Benjamin Casey

Title: Impact of a provider specific antimicrobial utilization report on prescribing practices at a community hospital

Authors: Maks Lutsenko, PharmD, Linda Johnson, PharmD, BCIDP

Objective: The goal of this project is to determine whether provider antimicrobial use "report cards" are effective at increasing the appropriateness of antimicrobial use.

Self Assessment Question: (True/False) Antimicrobial Stewardship programs are critical services that pharmacists can play key roles in reducing the overuse and misuse of antimicrobials?

Background: Antimicrobial stewardship is essential for ensuring the responsible use of antimicrobials in clinical practice to preserve their effectiveness and combat the rising threat of antimicrobial resistance. Antimicrobial stewardship programs aim to optimize the treatment of infections by promoting the appropriate selection, dosage, and duration of antimicrobial therapy, while also minimizing the overuse and misuse of these critical medications. Novel stewardship interventions, such as provider antimicrobial utilization “report cards”, have shown promise in modifying clinician behavior, yet their effectiveness in reducing unnecessary antimicrobial use is underexplored. Our institution created and distributed a provider specific antimicrobial use report to rounding hospitalists. The report had an “all antimicrobials” and a “piperacillin/tazobactam and cefepime” specific comparative de-identified bar graph and was paired with education. The goal of this project is to determine whether this intervention was effective at increasing the appropriateness of antimicrobial use.

Methods: Adult inpatients receiving antimicrobial therapy and being followed by a rounding hospitalist was included. Patients were excluded if being managed by the infectious diseases service or by a hematology/oncology provider. Primary endpoint will be antimicrobial use per provider in the pre-and post-periods (all antimicrobials and piperacillin/tazobactam/cefepime). Secondary endpoints will be collected from a subset of patients to evaluate the overall appropriateness of antimicrobial use.

Results: For our primary endpoint, we found a statistically significant reduction in overall antimicrobial use, and also within the subgroup of piperacillin/tazobactam and cefepime. Regarding our secondary endpoints, we found numerical improvements in appropriate usage with regards to pneumonia and intra-abdominal infection patient subsets. No adverse safety outcomes were noted.

Conclusion: The provider specific antimicrobial utilization tool was effective at reducing overall antimicrobial use and specifically the use of piperacillin/tazobactam and cefepime.

global: Y

4:20pm – 4:35pm L **Evaluation of Low Molecular Weight Heparin Dosing in Obese and Non-Obese Patients Using Anti-Factor Xa Levels** Olympia 2

Moderators: Brittany White
Presenters: Samantha Bailey
Evaluators: Rachel Langenderfer

Title: Evaluation of Low Molecular Weight Heparin Dosing in Obese and Non-Obese Patients Using Anti-Factor Xa Levels

Authors: Samantha Bailey, Paige Nickelsen, Hana Davis, Laura Beth Parsons

Background: Enoxaparin is a low molecular weight heparin widely used in the inpatient setting for the treatment and prevention of venous thromboembolism (VTE). Hospitalized patients with a BMI ≥ 40 kg/m2 are at an increased risk of developing VTE due to increased abdominal pressure, inactivity, chronic low-grade inflammatory state, and impaired fibrinolysis. However, enoxaparin's pharmacokinetics in obese patients are unpredictable and may be altered by rate of absorption, volume of distribution, and renal clearance. Due to its variable kinetics, there is no clear consensus on dosing enoxaparin in obese patients. It is necessary to establish more distinct dosing recommendations to ensure that patients are adequately anticoagulated without increasing the risk of adverse events, such as bleeding and thrombosis. In order to further assess adequate anticoagulation with enoxaparin in extremes of weight, investigators of this study aimed to compare peak anti-factor Xa levels and enoxaparin dosing regimens between patients with varying weights.

Methods: This is a retrospective cohort study conducted at a tertiary medical center. Patients were identified via a generated report of low molecular weight heparin anti-factor Xa orders from August 1, 2019 through August 1, 2024. Exclusion criteria consisted of patients with no active order for enoxaparin at time of anti-factor Xa level drawn, anti-factor Xa level not drawn at steady state, less than 18 years of age, pregnant, and incarcerated patients. The primary endpoint was incidence of therapeutic anti-factor Xa levels in patients receiving enoxaparin at prophylactic or treatment doses based on BMI. Secondary endpoints included incidence of therapeutic anti-factor Xa levels in patients receiving enoxaparin at prophylactic or treatment doses based on weight, incidence of thrombotic events, and incidence of bleeding events. Additional secondary endpoints were assessed by a subgroup analysis of patients with only therapeutic anti-factor Xa levels: dose evaluation in mg/kg for VTE prophylaxis or treatment based on BMI group and dose evaluation in mg/kg for VTE prophylaxis or treatment based on weight group.

Results: A total of 64 patients were included in this study: n=14 in the prophylaxis group and n=50 in the treatment group. In the prophylaxis group, the mean weight and BMI were 148.1 (±52.1) kg and 51 (±17) kg/m2, respectively. The mean prophylactic enoxaparin dose was 0.45 (±0.14) mg/kg, with 7 (50%) patients having a therapeutic anti-factor Xa level. In the treatment group, the mean weight and BMI were 113.1 (±37.6) kg and 38 (±13) kg/m2, respectively. The mean treatment enoxaparin dose was 0.95 (±0.11) mg/kg, with 18 (36%) patients having a therapeutic anti-factor Xa level. Among the non-therapeutic levels, the majority were supratherapeutic in both the prophylaxis (36%) and treatment (52%) groups. There were no major differences between anti-factor Xa levels when comparing weight versus BMI. Adverse events only occurred within the treatment group: bleeding in 6 (12%) patients.

Conclusion: Standard enoxaparin dosing may not be appropriate in patients with extremes of weight. While anti-factor Xa levels varied between different weight and BMI groups, our results suggest that we may be overdosing obese patients. Anti-factor Xa levels may be beneficial in guiding enoxaparin dosing in obese patients.

This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

global: Y

4:20pm – 4:35pm L **Evaluation of Pharmacist-Initiated Dose Adjustment of Prophylactic Enoxaparin in Low Body Weight Patients** Parthenon 2

Moderators: Alexis Pruitt

Presenters: Cody Seward

Title: Evaluation of Pharmacist-Initiated Dose Adjustment of Prophylactic Enoxaparin in Low Body Weight Patients

Authors:

- Cody Seward
- Breanne Wofford
- Kimberly Keller
- Brooke Brown
- Kaylee Behal
- Shaun Rowe
- Sarah Crowell
- Miller Hadley
- Ava Mosadegh

Objective: Compare the impact of a Pharmacy & Therapeutics (P&T) committee-approved protocol for pharmacist-driven adjustment of prophylactic enoxaparin dosing among low body weight patients pre- and post-protocol.

Background:

- Enoxaparin is commonly used for venous thromboembolism (VTE) prevention in acutely ill patients; however, low body weight may increase the risk of bleeding with standard dosing (40 mg daily). Low-dose enoxaparin (30 mg daily) has shown similar VTE prevention with lower bleeding rates. This study evaluates the impact of a pharmacist-initiated Pharmacy & Therapeutics (P&T) protocol on enoxaparin dosing adjustments in low body weight patients.

Methods:

- This quasi-experimental study, approved by the institutional review board, included 205 patients from September 1, 2022, to September 1, 2024. The P&Tprotocol allowing pharmacists to reduce enoxaparin doses for low body weight patients was implemented on October 31, 2023. Inclusion criteria were patients aged ≥ 18 years, receiving either enoxaparin 30 mg twice daily or 40 mg daily, with a BMI ≤18 or body weight ≤45 kg. Exclusion criteria included Creatinine Clearance <30 mL/minute at the time of enoxaparin initiation (Cockroft-Gault using adjusted body weight), therapeutic anticoagulation indication, acute thrombus on admission, active bleeding on admission, pregnant or peripartum, admitted or transferred to any ICU service, platelets < 50,000 cells/microliter, and patients with neuraxial catheters.Patients were required to receive at least two doses of enoxaparin to be included. Pre- and post-protocol groups were compared in accordance with when the P&T protocol was implemented. The primary outcome was whether or not the enoxaparin dose was appropriately adjusted to the reduced dose. Secondary outcomes included the title of the person initiating dose changes, time until adjustment, and bleeding incidence (defined by ISTH criteria).

Results:

- The analysis included 115 pre-protocol and 90 post-protocol encounters. The post-protocol group had significantly more appropriate enoxaparin dose adjustments to 30 mg daily (40 [33.0%] vs 75 [77.9%], $p < 0.0001$). Of those that received dose adjustments, pharmacists were the providers more commonly making dose adjustments (70 [77.9%] vs 4 [4.4%], $p < 0.0001$). The length of hospital stay was similar in both groups

(4.9 days vs 5.2 days, p = 0.2582). There were no significant differences in the time to appropriate dosing (0 [0,0] days vs 0 [0,1] days, p = 0.0676). Additionally, there were no major differences ineither major (0% in pre-protocol vs 0% in post-protocol) or minor bleeding incidence (0% in pre-protocol vs 1.1% in post-protocol, p = 0.439) between the groups.

Conclusions:

- A pharmacist-initiated P&T-approved dose-adjustment protocol resulted insignificantly more appropriate dose adjustments of enoxaparin by pharmacists, with no difference in bleeding events. The lack of bleeding events in either group may be a result of the low number of patients included in this study compared to other similar studies. The relatively short length of stay may also have contributed to the lack of bleeding events, as the follow-up period lasted only until hospital discharge; patients who experienced bleeding events after hospital discharge would not have had the event recorded in this study. Further study is needed with a larger sample size to fully understand the safety benefits of a pharmacist-initiated dose adjustment protocol of enoxaparin and whether such a protocol should be considered for broader implementation to enhance clinical outcomes in low body weight hospitalized patients at risk for VTE.

global: Y

4:20pm – 4:35pm L **Pre/Post Analysis of Vancomycin Dosing Guidance in Patients with Obesity in the Hospital Setting** Parthenon 1

Presenters: Courtney Feagin

Evaluators: Nick Mastromarino

Title: Pre/Post Analysis of Vancomycin Dosing Guidance in Patients with Obesity in the Hospital Setting

Authors: Courtney Feagin, Kelly Gamble, Hannah Schmoock

Background: Pharmacokinetic data for patients with obesity is not readily available for most medications, and pharmacokinetic profiles vary greatly between patients making dosing difficult to standardize. Supratherapeutic doses of vancomycin can lead to nephrotoxicity and ototoxicity, thus leading to the need for close monitoring of vancomycin levels. Currently, there is limited guidance on vancomycin dosing recommendations in this population. The purpose of this study is to evaluate the effects of a vancomycin dosing in obesity guidance document on dosing efficacy and patient outcomes.

Methods: This institutional review board approved, retrospective, single-center pre-post cohort study utilized an electronic list of adult patients hospitalized at McLeod Regional Medical Center between March 2024 and February 2025. The pre-group patients were evaluated between March 2024 and September 2024, and the post-group patients were evaluated between November 2024 and February 2025. Patients were included if they had a body mass index (BMI) of ≥ 30 kg/m2 on admission, received at least one dose of intravenous vancomycin, and had at least one vancomycin level drawn at steady state. Patients were excluded if they had baseline severe renal impairment (including acute kidney injury (AKI), hemodialysis, continuous renal replacement therapy, or peritoneal dialysis), pregnant or breastfeeding, reported an allergy to vancomycin, or if vancomycin was initiated at an outside institution. An internal guidance document was created by the infectious disease pharmacy team to aid with dosing vancomycin in patients with obesity, and it was presented to inpatient pharmacists during October 2024. Data was collected via an electronic, password protected spreadsheet accessible only to the primary study investigators. The primary outcome measured was the incidence of therapeutic doses of vancomycin according to target trough levels. Secondary outcomes measured were the incidence of obese patients receiving therapeutic doses of vancomycin according to target area under the curve (AUC) values, incidence of acute kidney injury (AKI), non-therapeutic trough levels at steady state, and non-therapeutic AUC values at steady state.

Results: Overall, 905 patients were screened for inclusion: 597 patients in the pre-guidance document group and 308 patients in the post-guidance document group. In the pre-group, 550 patients were excluded, and 45 patients were included. In the post-group, 283 patients were excluded, and 23 patients were included. The overall population is reflective of 61.8% (n=42/68) male, median age of 56 years old (interquartile range [IQR] 46 to 63), median BMI of 35.9 kg/m2 (IQR 32.3 to 41.4), and median Charleson Comorbidity Score of 2 (IQR 1 to 4). The primary outcome was seen in 26.7% (n=12/45) of patients in the pre-group and 34.8% (n=8/23) of patients in the post-group (p=0.49). Secondary outcomes in both groups are as follows: patients with AKI at 72 hours post discontinuation of vancomycin (17.8% vs. 21.7%, p=0.69), patients with a therapeutic AUC (60% vs. 56.5%, p=0.78), subtherapeutic trough level (35.6% vs. 30.4%, p=0.67), supratherapeutic trough level (37.8% vs. 34.8%, p=0.81), subtherapeutic AUC (17.8% vs. 17.4%, p=1.0), and supratherapeutic AUC (17.8% vs. 21.7%, p=0.72).

Conclusion: This retrospective cohort study did not find that there was a statistically significant difference between patients whose vancomycin was dosed with or without implementation of a pharmacy dosing guidance document. However, this could have been impacted by many different factors that would need to be reevaluated in future studies. These strategies may include requiring use of the dosing guidance document, re-educating

pharmacists on timing of troughs and using the guidance document, extending the study timeframe, and conducting the study after the national fluid shortage resolves.

global: Y

4:20pm – 4:35pm 1 **Time to Cytomegalovirus Viremia After Valganciclovir Discontinuation in Intermediate and High-Risk Kidney Transplant Recipients** Athena J

Moderators: Derek Gaul, Jillian Mantione

Presenters: Morgan Pickard

Title: Time to Cytomegalovirus Viremia After Valganciclovir Discontinuation in Intermediate and High-Risk Kidney Transplant Recipients

Authors: Morgan Pickard, Kwame Asare, Caren Azurin, Taylor Nickens

Objective: Duration from valganciclovir discontinuation to cytomegalovirus viremia in intermediate and high-risk kidney transplant recipients

Self Assessment Question: Does valganciclovir discontinuation impact time to CMV viremia in intermediate and high-risk kidney transplant recipients?

Background: Cytomegalovirus (CMV) infection is the most common opportunistic infection following solid organ transplantation, particularly affecting transplant recipients at intermediate (INT) (recipient positive) and high-risk (donor positive, recipient negative) for CMV reactivation. Reactivation can lead to serious complications such as tissue invasion and increased risk of rejection, opportunistic infection, and mortality. Valganciclovir (VGCV) is guideline approved for prophylaxis in these two groups, but its use can be limited by adverse effects such as leukopenia, which occurs in about 50% of patients. Despite the widespread use of VGCV, there is limited research examining whether the duration from VGCV discontinuation to CMV viremia varies between INT and high-risk kidney transplant recipients. This study aimed to evaluate if there is a difference in the mean duration from VGCV discontinuation to CMV viremia between these two groups.

Methods: This single-center retrospective chart review utilized electronic medical records and organ transplant tracking record (OTTR) software at Ascension Saint Thomas Hospital West (ASTHW), with data collected from March 2018 to April 2024. Kidney transplant recipients were identified via OTTR, and data from INT and high-risk groups were analyzed. Patients were categorized into INT and high-risk groups and screened for eligibility based on inclusion/exclusion criteria. Eligible participants were adults (≥ 18 years) who received a kidney transplant, were at INT or high-risk for CMV, discontinued VGCV, and developed CMV viremia. Exclusion criteria included dual organ transplants, pregnancy, incarceration, and restarting VGCV after rejection. The primary outcome assessed the difference in the mean duration from VGCV discontinuation to CMV viremia between the two groups. Secondary outcomes included rejection rates, readmission, resistant CMV, and bacterial, viral, or fungal infections after CMV viremia.

Results: A total of 202 patients were included, with 147 in the INT-risk and 55 in the high-risk groups. CMV viremia developed in 1 (6%) INT and 6 (43%) high-risk patients following VGCV discontinuation during the prophylactic period ($p = 0.018$). There were no significant differences in the duration of VGCV discontinuation to CMV viremia (42 vs. 43 days, $p = 0.999$). Additionally, there were no significant differences between the groups in rejection rates (0% vs. 0%, $p = 0.999$), readmission rates (100% vs. 50%, $p = 0.999$), infection rates (0% vs. 0%, $p = 0.999$), and resistant CMV rates (0% vs. 17%, $p = 0.999$). However, CMV developed in 37 (25%) INT and 12 (24%) high-risk individuals within 3 months following

prophylaxis. The time from VGCV discontinuation to CMV viremia during this time was significant between the groups (56 vs. 36 days, p = 0.021). The average interval between CMV tests was also significant (21 vs. 12 days, p < 0.0001).

Results: A total of 202 patients were included, with 147 in the INT-risk and 55 in the high-risk groups. CMV viremia developed in 1 (6%) INT and 6 (43%) high-risk patients following VGCV discontinuation during the prophylactic period (p = 0.018). There were no significant differences in the duration of VGCV discontinuation to CMV viremia (42 vs. 43 days, p = 0.999). Additionally, there were no significant differences between the groups in rejection rates (0% vs. 0%, p = 0.999), readmission rates (100% vs. 50%, p = 0.999), infection rates (0% vs. 0%, p = 0.999), and resistant CMV rates (0% vs. 17%, p = 0.999). However, CMV developed in 37 (25%) INT and 12 (24%) high-risk individuals within 3 months following prophylaxis. The time from VGCV discontinuation to CMV viremia during this time was significant between the groups (56 vs. 36 days, p = 0.021). The average interval between CMV tests was also significant (21 vs. 12 days, p < 0.0001).

Conclusion: No significant differences were found in the time from VGCV discontinuation to CMV viremia, or in rejection, readmission, infection, or resistant CMV rates during the prophylactic period. However, our study found that stopping prophylactic VGCV increases CMV risk, especially in the high-risk group. CMV was common in the first three months post-prophylaxis. We recommend CMV monitoring every 14 days during this period.

global: Y

4:40pm – 4:55pm B **The Impact of a Rural Health Scholars Program on Pharmacy Students' Attitudes Toward Rural Healthcare Delivery at Graduation** Athena D

Moderators: P. David Brackett
Presenters: Anna Hale
Evaluators: Kristina Vizcaino

Title: The Impact of a Rural Health Scholars Program on Pharmacy Students' Attitudes Toward Rural Healthcare Delivery at Graduation

Authors: Anna Hale, PharmD; Amanda Savage, PharmD; Stephanie Kiser, RPh

Objective: Assessing the impact of a Rural Pharmacy Health Certificate on pharmacy students' outlook on practicing healthcare in rural settings and their attitudes toward rural health.

Self-assessment question: Why is providing pharmacy students with exposure to rural healthcare important for the population health of North Carolina residents?

Background: Approximately 20% of the U.S. population lives in rural areas, where residents face higher rates of chronic conditions like COPD, obesity, and heart disease, as well as limited access to healthcare and higher poverty levels. As of September 2024, 66.33% of Primary Care Health Professional Shortage Areas were in rural regions. Integrating pharmacists into team-based care can help address this shortage, as they are well-equipped to manage chronic illnesses and provide comprehensive medication management. Since 2014, the Rural Pharmacy Health Certificate program at UNC Eshelman School of Pharmacy has provided rural health seminars, population health projects, experiential education in rural communities, service and leadership activities, and interprofessional education. Certificate faculty wanted to assess rural certificate participants prior to their graduation as it relates to students’ attitudes towards rural health and their desire to practice in rural areas.

Methods: The participants were final-year pharmacy students at the University of North Carolina Eshelman School of Pharmacy and completing a graduate certificate in Rural Pharmacy Health. All students who participated in the program were invited to complete a survey in the Spring semester prior to graduation. A total of 12 students, across the classes of 2022, 2023, 2024, and 2025 completed the survey. Students’ rural health attitudes data was collected using a Likert scale. Descriptive statistics were used to analyze students’ responses and determine the overall patterns of agreement or disagreement for each question. In addition, thematic analysis was conducted on open-ended questions exploring participants' background in rural health, their current knowledge and confidence from working in rural communities, and their future intentions to practice in rural settings.

Results: Pharmacy students enrolled in a Rural Pharmacy Health Certificate program had a high level of agreement in regard to social determinants of health that they found things they enjoy in a rural environment, living in rural environments provided an enjoyable lifestyle and that rural workplace settings are friendly environments. When exploring a sense of community there was a high level of agreement with people in rural communities being friendly, there is a great sense of belonging. There was a high level of disagreement that working in a rural area isolated the students from their family. When examining professional goals there was a high level of agreement that working in a rural area provided more opportunity to practice a variety of skills, staff are often more supportive in a rural environment and that they found greater opportunity for autonomy in rural practice. Students strongly agreed that rural seminars and rural rotations increased student confidence, knowledge of health disparities and barriers and increased understanding of the role of the pharmacist. After

graduation 85% of students said they were likely or very likely to practice in a rural setting, compared to reporting 54% prior to pharmacy school being likely or very likely to practice in a rural setting.

Conclusion: Overall pharmacy students in a Rural Pharmacy Health Certificate Program had a high level of agreement that living in a rural area would be enjoyable, that sense of community and friendliness was prominent in rural communities and that there were opportunities for professional development in rural communities. Pharmacy students indicated that prior to pharmacy school compared to after completion of the Rural Pharmacy Health Certificate Program they had a higher likelihood of wanting to practice in a rural area.

global: Y

4:40pm – 4:55pm B **What Medications Are Most Prescribed but Never Filled? Predictors of Nonadherence in Medicare 5-Star Population** Athena C

Moderators: Jonathan Schnider
Presenters: Caleb Williams
Evaluators: Brandon Sucher

Title: What Medications Are Most Prescribed but Never Filled? Predictors of Nonadherence in Medicare 5-Star Population

Authors: Caleb Williams, Nadia Hason, Naomi Yates

Contact: Caleb.x.williams@kp.org

Objective:
Primary: Evaluate the most abandoned therapies within the Medicare 5-Star population
Secondary: Compare the different demographic factors (gender, age, race, ethnicity) and measurable factors (PCP relationship, mail order utilization, comorbidities, lab values) and how they influence first fill adherence in the Medicare 5-Star population

Self-Assessment Question:
Which factor was consistently associated with increased medication adherence across all therapeutic categories (hypertension, diabetes, and high cholesterol)?
a) Age
b) Female gender
c) Mail order pharmacy (answer)
d) Race (black vs white)

Background:
Medication adherence significantly impacts patient outcomes and healthcare costs in the United States, particularly for chronic conditions such as diabetes, hypercholesterolemia and hypertensions. The first fill of a new maintenance medication is critical for establishing long-term therapy success, as failure to initiate treatment can indefinitely delay care, increase the risk of complications, and contribute to over $170 billion in annual healthcare expenditures. Identifying and addressing barriers is essential for improving early adherence and optimizing patient outcomes.

Methods:
This is a retrospective, IRB-exempt cohort study that included all Medicare 5-Star patients who were prescribed but did not fill generic oral diabetes, antihypertensives and/or statin medications from May 31st, 2023, to June 1st, 2024. Patients not enrolled at Kaiser Permanente through the full study duration were excluded. The primary outcome was to identify the most frequently abandoned therapies within the Medicare 5-Star population. The secondary outcome was to compare the different demographic factors, such as gender, age, race, ethnicity or measurable factors such as a lack of PCP relationship, underutilization of mail order, comorbidities, laboratory values and how they influence first fill adherence.

Results:
Between 5/31/2023 and 6/1/2024, a total of 27,674 Medicare 5-Star patients were included in the analysis of

first-fill adherence for diabetes, hypertension, and statin medications. Among these, 6,408 were prescribed an oral diabetes medication, 17,714 were prescribed a hypertension medication, and 17,305 were prescribed a statin medication. The overall first-fill rates were highest for hypertension medications (97.9%), followed by statins (96.5%) and diabetes medications (95.0%).

Several factors were significantly associated with higher odds of filling a first prescription across all three medication classes. A recent primary care provider (PCP) visit within the last 12 months was the strongest predictor of first-fill adherence, with odds ratios (OR) of 3.08 (95% CI: 2.47–3.83) for hypertension medications, 2.30 (95% CI: 1.92–2.75) for statins, and 1.81 (95% CI: 1.39–2.35) for diabetes medications ($p < 0.0001$ for all). Enrollment in kp.org was also associated with increased adherence, with ORs of 1.61 (95% CI: 1.24–2.09) for hypertension medications, 1.36 (95% CI: 1.09–1.71) for statins, and 1.48 (95% CI: 1.09–2.02) for diabetes medications ($p < 0.05$ for all).

Conversely, depression or the use of antidepressants was associated with lower adherence. Patients with depression had lower odds of filling their initial antihypertensive (OR 0.72, 95% CI: 0.56-0.91) or antidiabetic prescriptions (OR 0.64, 95% CI: 0.49 – 0.833, $p < 0.05$ for both). Additionally, racial disparities were observed, as Black/African American patients were significantly less likely to fill their first prescription compared to White patients for both diabetes (OR 0.72, 95% CI: 0.55–0.95) and statin medications (OR 0.74, 95% CI: 0.61–0.90, $p < 0.05$ for both).

Use of mail order pharmacy was strongly associated with first-fill adherence across all medication groups. Patients who used mail order had significantly higher odds of filling their first prescription compared to those using retail pharmacy, with ORs of 2.35 (95% CI: 1.89–2.93) for hypertension medications, 2.28 (95% CI: 1.92–2.71) for statins, and 1.78 (95% CI: 1.40–2.28) for diabetes medications ($p < 0.0001$ for all).

Conclusion:

This study aimed to identify key factors associated with first-fill adherence for diabetes, hypertension, and statin medications among Medicare 5-star patients. The findings suggest that patients with recent PCP visits, kp.org enrollment, and mail order pharmacy use were significantly more likely to fill their first prescription, while those with depression or taking antidepressants and certain racial/ethnic backgrounds exhibited lower adherence rates.

global: Y

4:40pm – 4:55pm Y **Evaluating the Impact of a Community Pharmacist-Led Blood Pressure Service to Improve Hypertension Control** Athena B

Moderators: Elaina Baaklini
Presenters: Tolulope Olajide
Evaluators: Karen Barlow

Title: Evaluating the Impact of a Community Pharmacist-Led Blood Pressure Service to Improve Hypertension Control

Authors: Tolulope Olajide, Allyson Marsh, Megan Boothby, Catie Harper, Nicole Aldaz, Claire O'Conner

Background:

Uncontrolled hypertension is associated with increased prevalence of major adverse cardiac events. This health disparity is thought to be largely driven by disparities in Social Drivers of Health (SDOH) in this population. In 2023 Cone Health identified a systemwide disparity between the proportion of patients identifying as Black or African American with hypertension control compared to that of the general population (69.9% vs. 74.8%). A previous cohort study in our health system found pharmacy student-led patient interactions, either in person within a community pharmacy or telephonic, were associated with a significant improvement in hypertension control. As community pharmacists are one of the most accessible healthcare professionals, pharmacist-led blood pressure screenings have the potential to positively impact blood pressure control on a broader scale. The purpose of this study is to assess the impact of community pharmacist-led blood pressure screening and education on hypertension control.

Methods:

This was a single system, multi-site, IRB-exempt, retrospective cohort study. Adults diagnosed with hypertension were included if they had a recent blood pressure reading ≥ 140/90 mmHg recorded in an ambulatory care setting. Patients were outreached via telephone or approached at their Cone Health community pharmacy. Patients that underwent telephonic outreach were recruited from an electronic medical record report that listed recent patient ambulatory blood pressure reading data taken at a Cone Health clinic. A community pharmacist, pharmacy resident, or pharmacy student under the supervision of a pharmacist led the blood pressure monitoring encounter. The pharmacist or pharmacy student led the visit by asking questions related to medication adherence, adverse effects, and at-home blood pressure monitoring. Patients were counseled on the importance of blood pressure control in preventing cardiovascular events, non-pharmacological methods of blood pressure control, and how to properly monitor their blood pressure at home. The primary outcome was a mean change in systolic and diastolic blood pressure in the overall study population. Secondary objectives included percent of African Americans and general population with BP at goal (< 140/90 mmHg), adherence to blood pressure medications (assessed by proportion of days covered), and the number of social drivers of health at risk at time of outreach.

Results:

Between August 1 and December 31, 2024, 70 patients were included in the study. Of this cohort, 59 patients (84.3%) had a post-encounter blood pressure (BP) reading recorded. Eight patients approached the pharmacy counter for BP screenings but only 2 patients were included in the study. The mean BP was 156/92 mmHg pre-encounter and 142/84 mmHg post-encounter, with a mean within-subject change in systolic blood pressure (SBP) of -12 .4 mmHg (95% CI –19.4 to –5.5; P< 0.001) and diastolic blood pressure (DBP) of –7.4 mmHg (95% CI –11.5 to –3.4; P < 0.001). Overall, achievement of target BP goal of < 140/90 mmHg occurred in 54.2% of patients post-intervention (OR 7.8; 95% CI 2.7-30.2; p<0.001). In a subgroup analysis, BP goal was achieved post-intervention in 26 of the 52 patients identifying as Black or African American and 6 of the 7 Non-Black patients; however, this difference did not reach statistical significance (P=0.11) at this sample size. Similarly, a trend toward greater mean within-subject reductions was observed in Non-Black compared to Black or African American participants for both SBP (-17.9 vs -11.7; P=0.57 and DBP -8.6 vs 7.3; P =0.84), but these subgroup differences were not statistically significant.

Conclusion:

Community pharmacist-led blood pressure monitoring encounters resulted in a decrease in average blood pressure. The disparity in achievement of controlled blood pressure persisted in our study, although this difference was not found to be statistically significant. This could be due to limited time and resources to address

patients' social determinants of health.

global: Y

4:40pm – 4:55pm R **Efficacy of Olanzapine versus Quetiapine for ICU Related Agitation and Delirium** Athena G

Moderators: Erica Merritt
Presenters: Nina Casanova
Evaluators: Sean Tran

Title: Efficacy of Olanzapine versus Quetiapine for ICU Related Agitation and Delirium

Authors: Nina Casanova, Trisha Sharma, Jasleen Bolina, Neha Naik, Sagar Dave, Tu-Trinh Tran

Background: Agitation and delirium are estimated to occur in 80% of critically ill patients admitted to the hospital; however, there is no gold standard of treatment. Initial management involves non-pharmacologic interventions and minimizing modifiable risk factors. While there is limited literature comparing atypical antipsychotics, critically ill patients experiencing agitation and delirium may benefit from their short-term use. This study aims to compare and evaluate the efficacy of olanzapine and quetiapine to treat agitation and delirium in the intensive care unit (ICU).

Methods: This retrospective cohort analysis evaluated patients receiving either olanzapine or quetiapine for at least 24 hours with an indication of agitation, sedation, or anxiety. The study population included patients who were admitted to either a medical or surgical ICU at a tertiary medical center between August 1, 2022 and April 1, 2024. Patients were excluded if antipsychotic therapy was initiated prior to ICU admission or as a continuation of home therapy, if their antipsychotic was ordered as needed, or if they were pregnant or incarcerated. The primary outcome was the duration of delirium while on the antipsychotic, validated via CAM-ICU scores. Secondary outcomes included ICU length of stay, antipsychotic therapy duration, and incidence of antipsychotic discontinuation prior to ICU discharge. Patient and hospital course characteristics were described using medians and interquartile ranges (IQR) for continuous variables and percentages for categorical variables.

Results: A total of 442 patients were reviewed for analysis. Data from 200 patients were analyzed, including 87 who received olanzapine and 113 who received quetiapine. Baseline characteristics were similar between the two groups. Risk factors for delirium prior to antipsychotic initiation included acute kidney injury (47% in olanzapine group vs. 52% in quetiapine group), alcohol use (14% vs. 12%), psychiatric diagnosis (20% vs. 19%), and prior benzodiazepine use at home (7% vs. 4%). The average duration of delirium was 5 days in both groups (p=0.447). The duration of antipsychotic therapy was similar in both groups at a median of 9 days for olanzapine and 8 days for quetiapine (p=0.510). Although a greater number of patients receiving quetiapine were mechanically ventilated at baseline than those receiving olanzapine, there was no statistically significant difference in overall duration of mechanical ventilation (64% vs. 44%). ICU length of stay was shorter for patients in the olanzapine group compared to the quetiapine group (11 vs. 14 days; p=0.043). Forty (46%) patients receiving olanzapine and forty-one (26%) patients receiving quetiapine were continued on their antipsychotic upon ICU discharge.

Conclusion: This study provides insight into the pharmacological management of ICU agitation and delirium by comparing the use of olanzapine and quetiapine. While olanzapine and quetiapine may have different effects on medication use patterns and mechanical ventilation, both antipsychotics appear similarly effective and well-tolerated in managing ICU-related agitation and delirium. Further research is needed to optimize treatment strategies in order to determine appropriate drug selection and utilization.

Contact email: nina.casanova@emoryhealthcare.org

global: Y

4:40pm – 4:55pm R **Evaluation of Phenobarbital and Benzodiazepine Use for Alcohol Withdrawal Treatment in the Medical Intensive Care Unit** Athena I

Moderators: Hania Zaki
Presenters: Jessica Schuchardt
Evaluators: Erin Massarello

Title: Evaluation of Phenobarbital and Benzodiazepine Use for Alcohol Withdrawal Treatment in the Medical Intensive Care Unit

Authors: Jessica Schuchardt; Mary Massaro; Benjamin Bevill; Micaela Seazzu; Robert Heidel; Madison Booker; Ashtyn Keller; Shauna Winters

Objective: This study aims to compare ICU length of stay for patients receiving phenobarbital and benzodiazepines versus benzodiazepines alone when treating AWS.

Self Assessment Question: Which of the following is **not** a reason why phenobarbital is considered a safe and effective alternative for alcohol withdrawal syndrome?

Background: There is a high prevalence of alcohol use disorder (AUD) leading to a significant risk of alcohol withdrawal syndrome (AWS) in critically ill patients. However, despite existing guidelines, there is limited evidence on the use of phenobarbital for AWS as part of a standardized protocol for medical intensive care unit (ICU) patients.

Methods: This study was a single-center, retrospective, pre-post analysis that compared pre-pathway patients admitted between January 2017 to January 2020 who received benzodiazepines alone to post-pathway patients admitted between August 2022 to September 2024 who received phenobarbital in addition to benzodiazepines for AWS. Patients were included if they were hospitalized with an ICD-10 code for alcohol withdrawal, admitted to the ICU with medical critical care as the primary team, and, for the post-pathway group, must have received phenobarbital from the pathway. The primary outcome was ICU length of stay, while secondary outcomes included hospital length of stay, incidence and length of mechanical ventilation, cumulative benzodiazepines dose, incidence of delirium, and use of adjunctive medications for AWS.

Results: 132 patients were included in analysis (n= 92 pre-pathway; n=40 post-p

global: Y

4:40pm – 4:55pm R **Riluzole for Motor Recovery in Patients with Traumatic Spinal Cord Injury** Athena H

Moderators: Sarah Blackwell
Presenters: Autumn Locke
Evaluators: Emily Johnston

Title: Riluzole for Motor Recovery in Patients with Traumatic Spinal Cord InjuryAuthors: Autumn Locke, PharmD; Kenji Leonard, MD; April Quidley, PharmD, BCCCP, BCPS, FCCM, FCCP; Elizabeth Langenstroer, PharmD, BCCP

Objective: The purpose of this study was to determine the impact of riluzole on motor recovery function in patients with spinal cord injury.

Self-Assessment Question: Which statement best summarizes the findings of this study on riluzole for acute spinal cord injury?

Background: Studies on the effect of riluzole have demonstrated conflicting results in improving functional outcomes for patients with spinal cord injury. The most recent study demonstrates benefit only in cervical spinal cord injuries when considering motor recovery scores. This analysis aims to address the uncertainty of riluzole use in all types of spinal cord injuries and determine if there is improvement in functional motor scores with the use of riluzole.

Methods: This was a single-center, retrospective analysis at East Carolina University Health Medical Center (ECUHMC) of adult patients with a documented spinal cord injury admitted to the surgical intensive care unit (SICU) and transferred to ECUHMC inpatient rehabilitation facility. Patients that received riluzole from January 1, 2020 to December 31, 2023 were compared to standard of care prior to riluzole acquisition from January 1, 2018 to December 31, 2019. Data was obtained from electronic health records. The primary objective of this study was to compare the change in American Spinal Cord Association (ASIA) score from admission to discharge from inpatient rehabilitation.

Results: A total of 129 patients were included in the analysis, with 85 patients in the post-riluzole group and 44 in the pre-riluzole group. Baseline characteristics between groups were similar; however, a significantly higher proportion of patients in the post-riluzole group received concomitant corticosteroids compared to those in the pre-riluzole group (29% vs. 7%; p = 0.007). Change in ASIA score from IPR admission to discharge, did not differ between groups (0 ± 0.605 vs. 0 ± 0.424; p = 0.9711). Patients in the post-riluzole group demonstrated significantly higher mean arterial pressure (MAP) targets (82.83 mmHg vs. 80.78 mmHg; p = 0.035) and a longer ICU length of stay (8 days vs. 5 days; p = 0.017). Other secondary outcomes, including duration of MAP push, hospital length of stay, mortality, and change in Glasgow Coma Score showed no difference between groups. Riluzole administration was associated with a significant increase in alanine aminotransferase (ALT) levels from baseline (30 ± 55.43 units/L) to day 7 of therapy (45 ± 49.5 units/L)(p = 0.039). Multivariable regression analysis revealed that none of the variables assessed, including riluzole exposure, age, neurological injury level, and MAP range, were independently associated with increased motor function recovery.

Conclusion: Riluzole was not associated with a statistically significant improvement in motor recovery as measured by ASIA scores.

global: Y

4:40pm – 4:55pm | **Evaluation of duration of antibiotic therapy in cellulitis and abscess treatment** Athena A

Moderators: Amy Carr
Presenters: Taylor Luthringer
Evaluators: Benjamin Casey

Title: Evaluation of duration of antibiotic therapy in cellulitis and abscess treatment

Authors: Taylor Luthringer, Rebecca Orr, Ashley Nebbia, Lauren Seymour

Background: The Infectious Diseases Society of America guidelines recommend a five- to seven-day course of antibiotics for most skin and soft-tissue infections. In most cases of uncomplicated cellulitis, a five-day course of antimicrobial therapy has shown to be as effective as a ten-day course, if clinical improvement has occurred by day five. The purpose of this study was to evaluate the duration of antibiotics prescribed in the treatment of cellulitis at a community health system.

Methods: This was a retrospective study of adults >18 yrs old admitted to a multi-campus community health system between January 30, 2024 and June 30, 2024 diagnosed with cellulitis and abscess based on International Classification of Diseases, Tenth Revision (ICD-10) codes. Patients with necrotizing fasciitis, pyomyositis, Group A streptococcal gangrene, osteomyelitis, or diabetic foot infection were excluded from the study. Patient demographics, total antibiotic duration of therapy (inpatient and discharge), hospital length of stay, readmission rates, infectious disease consult rates, and other clinical data were collected via manual chart review. Data was analyzed using descriptive statistics.

Results:
A total of 224 patients were included in the study. One hundred sixty-two (72.3%) patients received greater than or equal to eight days of antibiotic therapy and 62 (27.7%) patients received less than eight days of antibiotic therapy. The average inpatient antibiotic duration was 65 hours (2.7 days) and the average discharge prescription duration was 176 hours (7.3 hours), with the total antibiotic duration resulting at 240 hours (10 days) on average. The most commonly chosen initial antibiotics were vancomycin, cefepime, and ceftriaxone. Fifty (29%) patients were readmitted within 30-days of discharge. The average length of stay was 3 days.

Conclusion:
The majority of patients included in the study (72.3%) received antibiotics for 8 days or more and, on average, were treated with a 10 day course of antibiotics. Discharge prescriptions were written for an average of 7.3 day duration, indicating that the length of therapy beyond the guideline-recommended duration is largely due to discharge prescriptions. These results indicate there is a substantial opportunity for clinical pharmacist intervention in ensuring the efficient utilization of hospital resources to improve guideline compliance and reduce unnecessary antibiotic exposure.

global: Y

4:40pm – 4:55pm L **Impact of an Antibiotic Guide Paired with Audit and Feedback on Antipseudomonal Antibiotic Use in a Community Hospital** Parthenon 1

Presenters: Olivia Bray

Evaluators: Nick Mastromarino

Title: Impact of an Antibiotic Guide Paired with Audit and Feedback on Antipseudomonal Antibiotic Use in a Community Hospital

Authors: Olivia Bray, Linda Johnson

Objective: The purpose of this retrospective review is to evaluate the impact of the antimicrobial stewardship intervention in reducing the inappropriate use of piperacillin/tazobactam and cefepime when possible.

Self Assessment Question: True / False - It is appropriate to use antipseudomonal antibiotic coverage in all patients with community-aquired gram-negative infections.

Background: Overuse of broad spectrum antibiotics such as piperacillin/tazobactam and cefepime can lead to increased resistance and difficult to treat organisms. Our institution uses more piperacillin/tazobactam and cefepime than expected, with the majority of inappropriate use during the empiric phase of treatment. Based on this data, guidelines for appropriate use of piperacillin/tazobactam and cefepime were developed and distributed to providers. Furthermore, the antimicrobial stewardship pharmacist performed focused reviews and direct provider interventions Monday thru Friday to reduce inappropriate use.

Methods: Adult patients admitted to the hosptial initiated on antibiotics for gram negative rod infections for at least 48 hours during November 2023 (pre-period) and November 2024 (post-period) were included. Patients were excluded if not being managed by the hospitalist service or admitted to intensive care units, adult step down units, or hematology/oncology units. Patients being managed by the infectious disease services were also excluded.

Results: In progress

Conclusion: In progress

global: Y

4:40pm – 4:55pm L **Oral Vancomycin versus Fidaxomicin for Treatment of Initial Clostridioides Difficile Infection**

Moderators: Alexis Pruitt Parthenon 2

Presenters: Olivia Hill

TITLE: Oral Vancomycin vs Fidaxomicin for Treatment of Initial Clostridioides Difficile Infection

Olivia Hill, Marcus Mize, Serina Tart

BACKGROUND: The 2021 Society for Healthcare Epidemiology of America/Infectious Diseases Society of America (SHEA/IDSA) Update to the Clinical Practice Guidelines for the Management of *Clostridioides difficile* infection (CDI) in Adults recommends oral (PO) fidaxomicin 200 milligrams (mg) twice daily for 10 days as the preferred therapy for an initial severe or non-severe CDI episode due to lower rates of recurrence. Cost is a substantial barrier to fidaxomicin use and often leads to the utilization of PO vancomycin as the alternative initial treatment agent in practice. This research project aimed to evaluate the differences in treatment failure, rate of recurrence, and treatment cost between vancomycin and fidaxomicin for the treatment of initial CDI to provide additional information to help guide the choice between the two agents.

METHODS: This multicenter, retrospective, observational cohort study examined patients with confirmed first occurrence of mild to severe CDI who were admitted to hospitals within the Cape Fear Valley Health System (CFVHS) from January 1, 2023, to December 31, 2023. Included patients were 18 years or older and had a confirmed CDI defined as positive antigen/toxin or PCR test. Patients were excluded if they had a fulminant or recurrent CDI, were actively being treated for other infections, or had received bezlotoxumab. The primary outcome assessed the differences in composite endpoint of treatment failure and/or 30-day recurrence rates in patients with documented first occurrence of CDI treated with vancomycin versus fidaxomicin. Secondary outcomes included differences in the rate of treatment failure and rate of 30-day recurrence between groups as well as differences in mean treatment cost between intensive care unit (ICU) setting versus medical/surgical floors.

RESULTS: Sixty-seven patients met inclusion criteria with 7 patients in the fidaxomicin group and 60 in the PO vancomycin group. The most common reason for exclusion was treatment for concurrent infections. Of patients included, 47.8% had community acquired CDI, 94.0% of patients had non-severe CDI, and 97.0% were admitted to a medical/surgical floor at the time of diagnosis. The average length of stay from time of diagnosis was 6.48 days. For the primary outcome, 7 (11.7%) patients in the vancomycin group experienced treatment failure or 30-day recurrence compared to 3 (42.9%) patients in the fidaxomicin group (p=0.0284). Treatment failure was experienced by 5 (8.3%) patients in the PO vancomycin group compared to 3 (42.9%) patients in the fidaxomicin group (p=0.0077). Recurrence at 30 days was experienced by 2 (3.3%) patients in the PO vancomycin group compared to 1 (14.3%) patient in the fidaxomicin group (p=0.1849). All fidaxomicin patients were located on a medical/surgical floor. The mean treatment cost for those in the PO vancomycin group was $8,752.05 (± $10,067.92) versus $7,148.09 (± $3239.33) in the fidaxomicin group, with a cost difference of $1603.96 (95% CI –2081.1 to 5289.0, p=0.7506).

CONCLUSION: A limitation of this study was the lack of an adequate sample size in the fidaxomicin group which led to wide intergroup variability, making it difficult to draw conclusions. Within the PO vancomycin group, there were lower rates of treatment failure, 30-day recurrence, and 1-year recurrence compared to fidaxomicin. Although the results of this study are hypothesis-generating, it supports the idea that PO vancomycin could be utilized as a first-line option for initial CDI without increasing the risk of recurrence or treatment failure. More studies should be conducted to further analyze the

potential for vancomycin’s place as a first-line agent for initial CDI.

global: Y

4:40pm – 4:55pm O **Comparison of Dostarlimab to Pembrolizumab in Combination with Chemotherapy in Patients with Advanced or Recurrent Endometrial Cancer** Olympia 2

Moderators: Brittany White
Presenters: Aaliyah Parchment
Evaluators: Rachel Langenderfer

Title: Comparison of Dostarlimab to Pembrolizumab in Combination with Chemotherapy in Patients with Advanced or Recurrent Endometrial Cancer

Authors: Aaliyah Parchment, Stephen Tomasek, Sarah Gifford, Nhi Tran, Joann Gold

Background/Purpose: Carboplatin and paclitaxel, combined with either dostarlimab or pembrolizumab, are National Comphrehensive Cancer Network approved standard-of-care regimens for the first line treatment of stage III or IV or recurrent endometrial cancer. However, despite the widespread use of dostarlimab and pembrolizumab, no clinical studies have been conducted to directly compare these two agents head-to-head when combined with cytotoxic chemotherapy. The objective of this study is to compare the efficacy and safety of dostarlimab and pembrolizumab when used in conjunction with carboplatin and paclitaxel for the first-line treatment of patients with stage III or IV endometrial cancer and those experiencing their first recurrence of the disease.

Methodology: This study is a retrospective chart review conducted at AdventHealth to compare the impact of dostarlimab and pembrolizumab with concurrent chemotherapy. The study has received approval from the Institutional Review Board. Those included in the study are patients with advanced or recurrent endometrial cancer who have received dostarlimab or pembrolizumab in combination with carboplatin and paclitaxel within AdventHealth from August 1, 2022, to January 31, 2024. Patients included are women 18 years of age and older with historical confirmed diagnosis of primary stage III or IV endometrial cancer, or first recurrence of disease. Patients with more than one recurrence of endometrial cancer will be excluded. Data collection from the electronic medical record will include patient demographics (age, race), tumor characteristics (histology type, stage at diagnosis, microsatellite instability status/mismatch repair status), and any prior therapies.

The primary outcome is rate of progression free survival (PFS), defined as the proportion of patients who remained alive and without disease
progression. The secondary outcome is overall survival (OS), measured as the duration from the initiation of treatment to death from any cause. Safety outcomes will be evaluated by common side effects associated with immunotherapy. The primary, secondary, and safety outcomes will be analyzed by basic statistical analyses.

Results: Baseline characteristics, including age, treatment history, and molecular profiles, were similar between groups. Median progression-free survival (PFS) was 144 days (95% CI, 106.58–181.42) in the dostarlimab group and 173 days (95% CI, 0.00–379.44) in the pembrolizumab group; this difference was not statistically significant (P = 0.656). No deaths occurred in the pembrolizumab group, limiting overall survival (OS) comparison. Adverse events occurred in all patients. Treatment interruptions were more frequent with pembrolizumab (20% vs. 5%, P = 0.034). Constipation (P = 0.027) and myalgia (*P* = 0.023) were significantly more common in the pembrolizumab group, while grade ≥3 anemia was more frequent in the dostarlimab group (P = 0.006).

Conclusion: Dostarlimab and pembrolizumab demonstrated similar PFS outcomes, with no significant differences observed. The absence of deaths in the pembrolizumab group limited OS comparisons. Pembrolizumab was linked to more frequent treatment delays and gastrointestinal and musculoskeletal adverse events, while dostarlimab was associated with a higher rate of severe anemia. Overall, both regimens had comparable safety profiles. Further investigation in larger cohorts is warranted to confirm these findings.

Presentation Objective: Identify clinical data comparing dostarlimab to pembrolizumab with chemotherapy in

advanced endometrial cancer

Self-Assessment Question:

Which of the following correctly describes the intervention arm of the RUBY trial for first-line therapy in advanced or recurrent endometrial cancer?

A. Pembrolizumab 200 mg + chemotherapy for 6 cycles q3w, followed by pembrolizumab 400 mg q6w

B. Dostarlimab 500 mg + chemotherapy for 6 cycles q3w, followed by dostarlimab 1000 mg q6w up to 3 years

C. Chemotherapy alone for 6 cycles

D. Dostarlimab 1000 mg q3w + chemotherapy, followed by pembrolizumab 400 mg

global: Y

4:40pm – 4:55pm P **Impact of Liposomal Bupivacaine on Postoperative Opioid Consumption in Thoracic Surgery**
Moderators: Saumil Vaghela Olympia 1
Presenters: Stefanie Pappas
Evaluators: Michael Saxon

Ttile: Impact of Liposomal Bupivacaine on Postoperative Opioid Consumption in Thoracic Surgery

Authors: Stefanie Pappas, Jordan Brooke Bibb, John Lazaar

Introduction: With advancements in multimodal and regional anesthesia, non-opioid pain management strategies have become increasingly popular. Local anesthetics can play a key role in minimizing opioid use and related complications; however, their effectiveness is often limited by a short duration of action. At Ascension Saint Thomas Hospital West (ASTHW), elastomeric infusion pumps were commonly utilized in thoracic surgery patients to deliver plain bupivacaine at the surgical site via an indwelling catheter. In June 2022, liposomal bupivacaine, a long acting formulation, was added to hospital formulary and replaced the use of infusion pumps. Research on liposomal bupivacaine has shown benefits such as reduced opioid use, lower pain scores, and shorter hospital stays, although results vary based on surgical site, technique, and intervention. The purpose of this study was to determine the impact on inpatient opioid consumption in thoracic surgery patients when utilizing a liposomal bupivacaine block compared to local infiltration of plain bupivacaine via an elastomeric infusion pump.

Methods: This is a single-center, retrospective chart review of patients who underwent robotic lobectomy at ASTHW during two time periods: June 2021 through June 2022 and August 2022 through March 2024. Patients were included if they were at least 18 years of age and received either a single administration of liposomal bupivacaine or a continuous administration of plain bupivacaine via an elastomeric infusion pump. Patients with a history of substance use disorder, concurrent use of buprenorphine, methadone, naltrexone, were pregnant, or incarcerated were excluded. The primary outcome was to determine if there was a difference in postoperative morphine milligram equivalent (MME) usage between the two cohorts. Secondary outcomes included postoperative pain scores, hospital length of stay and incidence of post-operative wound infection.

Results: Sixty-two patients were included in the study (plain bupivacaine = 34; liposomal bupivacaine = 24). There was no statistically significant difference in postoperative MME usage between the plain bupivacaine group and liposomal bupivacaine group on day 1 (36.5 vs. 41.3; p = 0.92), day 2 (15 vs. 15; p = 0.84) or day 3 (2.5 vs. 3.25 ; p = 0.91). The groups were also similar in postoperative pain scores, hospital length of stay, and incidence of wound infection.

Conclusion:
In our study of patients undergoing robotic lobectomy, single administration of a liposomal bupivacaine block was comparable to local infiltration of plain bupivacaine for postoperative opioid consumption. Further research is needed to confirm any potential benefit; however, it appears that liposomal bupivacaine may be a similar and less invasive alternative for our thoracic surgery patients.

global: Y

5:00pm – 5:15pm B **Impact of Clinical Pharmacy Team Intervention on Naloxone Fills in Patients on Chronic Opioid Therapy** Athena D

Moderators: P. David Brackett
Presenters: Rosy S Sijapati
Evaluators: Kristina Vizcaino

TITLE: Impact of clinical pharmacy team intervention on naloxone fills in patients on chronic opioid therapy
AUTHORS: Rosy S. Sijapati, Erin R. Himes, Stephanie Hale
BACKGROUND: Opioids are highly effective for pain management but carry risks of addiction, overdose, and life-threatening respiratory depression. Naloxone, an opioid antagonist, can quickly reverse opioid overdoses by blocking opioid receptors in the brain. Despite its effectiveness, naloxone remains underutilized due to barriers such as stigma, lack of awareness, and access issues. Kaiser Permanente created the Interregional Pharmacy Opioid Use Improvement (OUI) Group to support safe opioid prescribing and increase appropriate naloxone prescribing. The purpose of this study was to evaluate the impact of clinical pharmacy team interventions on naloxone fills in patients on chronic opioid therapy of ≥ 50 morphine milligram equivalents (MME)/day.
METHODS: This was a retrospective, observational, IRB-exempt cohort study conducted within an integrated healthcare delivery system. Inclusion criteria included Kaiser Permanente Georgia (KPGA) members who are 18 years and older and filling chronic opioid therapy of ≥ 50 MME averaged over the last 90 days. Exclusion criteria included patients with a cancer diagnosis or enrolled in hospice care. The primary objective was to compare the number of patients meeting inclusion criteria who filled a naloxone prescription within the last 24 months as of March 31, 2023 versus as of December 31, 2023. The secondary outcome was to compare the naloxone fill rates based on intervention type. Data reported by the OUI Group from April 1, 2023, to September 30, 2023 was used. Descriptive statistics was used to determine the similarities in patient characteristics and the Chi-squared test was used to determine the statistical significance of categorial variables.
RESULTS: A total of 496 patients were included in this study. The mean patient age was 60 years, and the majority were Caucasian female (55%). As of March 31, 2023, 399 patients were eligible for a naloxone prescription compared to 356 patients eligible as of December 31, 2023. There were 122 naloxone prescriptions (30.6%) filled as of March 31, 2023 and 241 naloxone prescriptions (67.7%) filled as of December 31, 2023. This represents an absolute increase of 119 naloxone prescriptions (37.1%) between the pre- and post-intervention time periods ($P < 0.0001$). Clinical Pharmacy Specialists (CPSs) contacted 31 patients via telephone outreach, all of whom (100%) filled their naloxone prescriptions. Pharmacy technicians contacted 106 patients via telephone outreach, resulting in 75 naloxone prescriptions filled (70.8%). An additional 56 patients received outreach via secure message only, with 42 naloxone prescriptions filled (75%). Among patients not directly reached, 37 received voicemails, and 15 of those (40.5%) filled their naloxone prescriptions. Additionally, 100 patients were successfully reached and spoken to directly, and 91 naloxone prescriptions were filled (91%).
CONCLUSION: The rate of naloxone prescription fills increased significantly when the clinical pharmacy team intervened. The findings of this study suggest that direct telephone contact, especially by clinical pharmacists, had the highest success rate for encouraging patients to fill their naloxone prescriptions. Voicemails had a significantly lower fill rate, highlighting the importance of direct interaction in improving patient outcomes.

global: Y

5:00pm – 5:15pm Y **Utilization of Pharmacist Instructors in Didactic Curricula Across Graduate Healthcare Education Programs** Athena B

Moderators: Elaina Baaklini
Presenters: River Medlin
Evaluators: Karen Barlow

Title: Utilization of Pharmacist Instructors in Didactic Curricula Across Graduate Healthcare Education Programs

Authors: River Medlin, Carrie Baker, Riley Bowers

Background: Pharmacology and pharmacotherapy courses are part of curricula across health science programs with a variety of strategies utilized to deliver this material including the use of pharmacists. Previous literature has examined the use of pharmacists within physician assistant (PA) programs, but is limited concerning use across graduate healthcare education programs. The purpose of this research was to describe the current utilization of pharmacists in didactic instruction among graduate healthcare education programs along with barriers to utilization.

Methods: This was a cross-sectional, descriptive survey electronically distributed to graduate healthcare education programs within the United States between October 30, 2024 and February 3, 2025. Eligible programs included accredited physician (MD, DO), physician assistant (PA), physical therapy (PT), and occupational therapy (OT) programs. The primary outcome was to compare the utilization of pharmacists as instructors within didactic curricula between accredited health profession education programs.

Results: Contact information was collected for 903 eligible programs with emails successfully deployed to 823 programs. Of those programs, 129 (15.7%) responded**.** Overall responses indicated that 74 (57.4%) programs utilized pharmacists as instructors within their curriculum. When examined by individual program type, 13/18 (72.2%) of MD/DO, 44/51 (86.3%) of PA, and 17/60 (28.3%) of PT/OT programs utilized pharmacists. The most common barrier across all disciplines was availability of qualified pharmacists, and the most influential factor in determining utilization was qualifications of pharmacists.

Conclusion: Current utilization of pharmacist instructors varies across disciplines and regions within the United States. The most influential factors for programs who utilized pharmacists and those who did not was the qualifications of pharmacists and availability of pharmacists with adequate qualifications. This emphasis on qualifications identifies an opportunity for pharmacists to better promote their expertise and capabilities as instructors as the number of pharmacists with post-graduate training, specialization, and board certifications continues to increase.

global: Y

5:00pm – 5:15pm R **Dual Antiplatelet Strategies for Intracranial Aneurysms Treated with PipelineTM Flex Embolization Device with Shield TechnologyTM** Athena H

Moderators: Sarah Blackwell
Presenters: Brian Shouse
Evaluators: Emily Johnston

Dual Antiplatelet Strategies for Intracranial Aneurysms Treated with Pipeline™ Flex Embolization Device with Shield Technology™

Authors: Brian Shouse; Adam L. Wiss; Chris Larkin

Background:

Flow diverting stents are a common treatment for intracranial aneurysms, especially those that are wide-necked. While surface modifications to new generation flow diverting stents have sought to improve compatibility and mitigate thrombosis risk, dual antiplatelet therapy (DAPT) is recommended. Aspirin and clopidogrel are the most commonly utilized agents for initial DAPT regimens, but the optimal antiplatelet strategy remains unclear. Due to differences in the genetic variability and potency, among other factors, between oral P2Y12 antagonists, our institution often utilizes a platelet reactivity assay (PRA) to optimize the thrombosis and hemorrhage risk for patients requiring DAPT for flow diverting stents. For example, for patients in whom clopidogrel resistance is of concern, alternative DAPT strategies with ticagrelor or prasugrel, in addition to aspirin, may be utilized. Conversely, clopidogrel hyperresponders may be changed to a less intensive dosing regimen (i.e., <75 mg daily). However, the impact of the aforementioned DAPT regimens on thrombotic risk and hemorrhagic complications is not known. This study aimed to evaluate the impact of DAPT using aspirin and clopidogrel 75 mg once daily (standard) versus DAPT with aspirin combined with either an alternative clopidogrel dosage or ticagrelor (alternative) in patients with intracranial aneurysms treated with the Pipeline™ Flex device with Shield Technology™.

Methods:

This was a single center, retrospective chart review of adult patients treated with Pipeline™ Flex Embolization Device with Shield Technology™ at Ascension Saint Thomas Hospital West from March 1, 2021 to June 1, 2024. Patients were placed into one of two groups based on their discharge DAPT regimen. The primary outcome was the incidence and severity of thromboembolic events within 3 to 6 months on standard vs alternative dosing DAPT, which was defined by new clinical stroke or thrombus on imaging. Secondary outcomes included hospital readmission and death within 3 to 6 months of procedure.

Results:

Forty patients were included (standard n= 23, alternative n=17). Baseline characteristics were similar, with a median age of 59 years and 85% female. Ruptured aneurysms occurred in 39.1% of the standard group versus 23.5% of the alternative group. Among those with rupture, 66.6% in the standard group had a Hunt and Hess score ≥3, compared to 0% in the alternative group. In the standard group, the most common dual antiplatelet therapy (DAPT) regimen was aspirin plus clopidogrel 75mg daily (100%), whereas alternative regimens included clopidogrel 75mg every

other day (64.7%) or ticagrelor-based (17.7%). The most common standard DAPT regimen was aspirin plus clopidogrel 75 mg daily (100%), while alternative regimens included clopidogrel 75 mg every other day (64.7%) or ticagrelor-based therapy (17.7%). No significant differences were observed in the primary outcome of thromboembolic events at 3–6 months (4.3% vs. 11.8%, p=0.5647) There were no significant differences in any secondary outcomes.

Conclusion/Discussi

global: Y

5:00pm – 5:15pm R **Impact of Surge Capacity on Time to Subsequent Dose of Antibiotics for Sepsis Patients in the Emergency Department** Athena G

Moderators: Erica Merritt
Presenters: Stephanie Knode
Evaluators: Sean Tran

Title: Impact of Surge Capacity on Time to Subsequent Dose of Antibiotics for Sepsis Patients in the Emergency Department

Authors: Stephanie Knode, Chelsie Sanders, Ginger Gamble, Amy Campbell; ECU Health Medical Center-Greenville, NC

Background/Purpose:
Antibiotics are a cornerstone of sepsis treatment, however there is no guidance on the impact of subsequent antibiotic delays on clinical outcomes. Previous studies have evaluated the impact of delays and discussed external factors that may influence these delays. No current studies have evaluated how surge capacity may impact delays in second dose antibiotics. Therefore, the objective of this study is to compare the impact of red/disaster capacity versus green/yellow capacity on delays in second dose antibiotics for sepsis patients in the emergency department.

Methods:
Eligible patients are 18 years or older with a diagnosis of sepsis who received at least two doses of the same intravenous antibiotic, with the first dose given in the emergency department. Antibiotics needed to have a 6-, 8-, or 12-hour administration frequency. Patients were excluded if they expired prior to the second dose of antibiotics, were pregnant or a prisoner, received their first dose of antibiotics prior to ED arrival, or if there was escalation or change in empiric coverage between the first and second dose of antibiotics. This study is a single-center, retrospective, observational review with patient data obtained through Vizient and capacity data through hospital operations.

Results:
The initial Vizient data pull identified 1292 patients potentially eligible for this study, of which 1000 patients were excluded. The most common reasons for exclusion were receipt of 24 hour dosed antibiotics and change in empiric antibiotics between the first and second dose. 292 patients who received 302 antibiotics were eligible for inclusion in this study. Baseline characteristics were similar between groups, including age, sex, weight, renal function, and the choice of empiric antibiotics. The primary outcome of incidence in delay of second dose antibiotics was seen in 130 patients (68.78%) in the green and yellow capacity group versus 66 patients (58.41%) in the red and internal disaster capacity group, with a p-value of 0.081. Hospital mortality, 7-, 30-, and 90-day mortality were not significantly different between groups, nor were need for mechanical ventilation, admission to an intensive care unit (ICU), or hospital and ICU lengths of stay.

Conclusions:
Red/disaster capacity did not have a significant impact on the incidence of second dose antibiotic delays versus green/yellow capacity for sepsis patients in the emergency department.

global: Y

5:00pm – 5:15pm | **Cost-Benefit Analysis of Inpatient Penicillin Allergy Assessment** Athena A

Moderators: Amy Carr
Presenters: Ted Holmes III
Evaluators: Benjamin Casey

Title:
Cost-Benefit Analysis of Inpatient Penicillin Allergy Assessment

Authors: Ted Holmes III; Melissa Padgett; Caitlin Ellis

Objective:
Identify the positive effects of penicillin allergy de-labeling.

Self-Assessment Question:
Which of the following has been associated with penicillin allergy de-labeling?

Background:
Across most healthcare institutions, documented allergies result in avoidance of those medications, even if the reaction is unknown. However, up to 95% of patients either have an adverse effect incorrectly labeled as a penicillin allergy or have a childhood allergy. These inconsistencies put the patients at risk for receiving less effective treatment and adverse outcomes. To make matters worse, these alternative therapies may also increase costs for the patient and the facility. The purpose of this study is to analyze the cost impact of patients with documented penicillin allergies who are receiving inpatient antibiotics.

Methods:
This is a single-center, cost-benefit analysis conducted at a 515-bed academic hospital. Adults who were prescribed antibiotics and had a documented penicillin allergy or intolerance were included. Patients were excluded if they received antibiotics for less than 48 hours (both cohorts) or those who were unwilling or unable to participate in the interview (penicillin allergy clarification cohort only). Included patients were divided into two cohorts: those who received penicillin allergy clarification (pharmacy intervention) and those who did not receive an intervention. The primary endpoint was the total cost of antibiotics calculated from the average wholesale price, derived from publicly available resources. The secondary endpoints were antibiotic days of therapy and hospital length of stay.

Results:
Two hundred and sixty-eight patients were included in the study. The primary outcome of total cost of antibiotics was $240.80 and $254.60 for cohorts 1 and 2 respectively (p=0.7270). Cohort 1 had an average of 9.7 days of antibiotic therapy as compared to 8.9 days in Cohort 2 (p=0.4783). The average length of stay was 6.7 days in Cohort 1 and 5.6 days in Cohort 2 (p=0.0886).

Conclusion:
Although there was no statistically significant difference between any of the outcomes, there was a trend towards higher utilization of penicillins and lower utilization of carbapenems in patients who had their allergy clarified. As seen in other studies, potential cost savings may be due to the shorter length of hospital stay observed in patients who have had their allergy clarified. Larger studies are warranted to determine the true financial implications of penicillin allergy de-labeling.

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global: Y

5:00pm – 5:15pm L **EFFECTIVENESS OF PARTIAL VS. FULL-LEAD-IN APIXABAN IN ACUTE VTE AFTER INITIAL PARENTERAL THERAPY** Olympia 2

Moderators: Brittany White
Presenters: Gabriel Vivas Casanova
Evaluators: Rachel Langenderfer

EFFECTIVENESS OF PARTIAL VS. FULL-LEAD-IN APIXABAN IN ACUTE VTE AFTER INITIAL PARENTERAL THERAPY

Background: Apixaban, a direct oral anticoagulant (DOAC), is commonly used to treat venous thromboembolism (VTE). The AMPLIFY trial established a seven-day apixaban lead-in regimen following parenteral therapy for acute VTE treatment, but clinical practice often results in extended parenteral anticoagulation preceding apixaban exposure, creating uncertainty regarding optimal apixaban lead-in strategies. A partial lead-in regimen, where apixaban completes the full seven-day regimen including days of parenteral therapy, contrasts with the full lead-in regimen of seven days of apixaban regardless of prior parenteral treatment duration. The impact of these diverse strategies on bleeding and VTE recurrence risk is not well understood. This study aimed to evaluate whether a full apixaban lead-in regimen increases bleeding risk compared to a partial apixaban lead-in regimen in patients with VTE.

Methodology: This was a single-center, retrospective chart review of patients who were started on high dose apixaban 10 mg twice daily after more than 36 hours of parenteral anticoagulation for VTE treatment between August 2015 and September 2024. Patients were included in the full lead-in group if they were ordered 7 days of high dose apixaban after parenteral anticoagulation and patients were included in the partial lead-in group if they were ordered enough high dose apixaban doses to completed 7 full days of anticoagulation, started by the parenteral anticoagulants. The primary outcome was the incidence of major bleeding as defined by the ISTH guidelines. Secondary outcomes included non-major bleeding, readmission for bleeding, and medical contact for VTE recurrence or bleeding within 90 days.

Results: 418 patients were screened and 61 were included in the study. A total of 58 patients were assigned to the full lead-in group and 8 patients to the partial lead-in group. The primary outcome of incidence of major bleeding was seen in 2 (3.8%) patients in the full lead-in group and 2 (25%) patients in the partial lead-in group (P= 0.247). The secondary outcome of readmission for bleeding was seen in 2 (3.8%) patients on the full lead-in group and 1 (12.5%) patient in the partial lead-in group (P=0.349). Medical contact for VTE recurrence or bleeding within 90 days was not present in either group.

Conclusions: This study found that real world prescribing practices favors the full lead-in apixaban therapy dosing strategy. The full lead-in group did not show a higher rate of ISTH major bleeding. However, the small sample size, especially in the partial lead-in group, limits conclusions. Larger studies and randomized controlled trials are needed to establish the real safety and efficacy of these two dosing strategies.

global: Y

5:00pm – 5:15pm L **Evaluation of SGLT2 Inhibitor Effects on Glycemic Management in Hospitalized Non-Critically Ill Patients** Parthenon 2

Moderators: Alexis Pruitt

Presenters: E Marineau

Title:

Evaluation of SGLT2 Inhibitor Effects on Glycemic Management in Hospitalized Non-Critically Ill Patients

Authors:

EJ Marineau, PharmD

Dennis Dubovetsky, PharmD

Background:

The American Association of Clinical Endocrinology (AACE) and American Diabetes Association (ADA) guidelines recommend the use of sodium-glucose co-transporter-2 inhibitors (SGLT2i) in patients with type 2 diabetes mellitus (T2DM) who either have established or are high-risk for atherosclerotic cardiovascular disease, heart failure (HF), or chronic kidney disease. ADA endorses use of SGLT2i in T2DM patients hospitalized with HF, while AACE and Endocrine society guidelines provide no guidance on SGLT2i role in hospitalized patient population. Only a handful of studies focused on evaluation and reported glycemic management outcomes and safety in hospitalized patients with T2DM receiving SGLT2i. Due to this increased inpatient use, additional data on safety and efficacy for glycemic management is warranted. The objective of this study was to assess the safety and efficacy of SGLT2i in the management of T2DM in non-critically ill hospitalized patients.

Methods:

This was a single-center, retrospective chart review conducted at AdventHealth Orlando. Patients were enrolled if they were at least 18 years of age and had an established history of T2DM. Intervention group consisted of patients who received a SGLT2i plus multimodal insulin and compared to patients who received multimodal insulin alone. Primary objective evaluated difference in median blood glucoses. Secondary objectives evaluated difference: percentage of blood glucose readings within target range (100 to 180 mg/dl), total insulin dose (units), 90-day all-cause readmission rate, inpatient mortality, rate of acute kidney injury, length of stay (days), percentage of patients with hypoglycemic events (less than 70 mg/dl), and rate of new onset ketoacidosis.

Results:

A total of 150 patients met the inclusion criteria and were evenly distributed into each arm. There was a significant difference in the primary outcome of median blood glucose in favor of the SGLT2i arm (165 mg/dL) compared to the insulin alone arm (180 mg/dL, $p<0.001$). Patients in the SGLT2i arm received lower median total daily dose of insulin (15 versus 16 units, $p=0.006$). SGLT2i arm was associated with lower median number of 90-day readmissions (28 versus 48 $p=0.005$). There was no difference between the groups with respect to remaining safety secondary outcomes of inpatient mortality, length of stay, acute kidney injury, rates of hypoglycemic events and ketoacidosis (p=NS).

Conclusions:

In acutely ill hospitalized patients with T2DM treatment with SGLT2i in addition to standard care (multimodal insulin) was associated with overall lower blood glucose values, lower insulin requirements, and a lower rate of 90-day readmissions when compared to insulin only strategy. SGLT2i exposure was not associated with significant difference in other safety outcomes. Further studies are warranted to characterize safety and efficacy profile of SGLT2i as an option for inpatient glycemic management.

global: Y

5:00pm – 5:15pm L **Impact of Oral Antibiotics on Length of Stay in Patients with Gram-Negative Rod Bacteremia**
Presenters: Katlyn Womble
Evaluators: Nick Mastromarino
Parthenon 1

Title: Impact of Oral Antibiotics on Length of Stay in Patients with Gram-Negative Rod Bacteremia

Authors: Katlyn Womble, Marcus Mize, Serina Tart

Objective: To compare the length of hospital stay (LOS) in days in patients with gram-negative rod (GNR) bacteremia who are transitioned to oral antibiotics to complete treatment versus patients who receive intravenous (IV) antibiotics for the duration of therapy.

Methods: Eligible patients were those aged ≥18 years old, admitted to a hospital within the health system from January 2023 – December 2023 with documented GNR bacteremia, and received antibiotic therapy for ≥48 hours. Patients with polymicrobial infections, multi-drug resistant (MDR) or extended-spectrum beta-lactamase (ESBL) organisms, were unable to tolerate oral medications, had an infection or predisposing condition that would require IV therapy, or received >14 days of IV therapy were excluded. Data was collected through chart review on the electronic health record system. The primary outcome was the difference in LOS between patients who were transitioned to oral therapy compared to those who remained on IV therapy for the duration of treatment. Secondary outcomes included percentage of treatment failure in each group, the difference in total duration of antibiotic therapy between groups, and the difference in LOS between patients who were transitioned to oral therapy early (defined as ≤4 days from start of appropriate antibiotics) compared to those who were transitioned to oral therapy late.

Results: Of the 388 patients reviewed, 176 patients were excluded with the most common reason being polymicrobial infection. A total of 208 patients were included, with 168 being transitioned to oral antibiotics and 40 receiving IV antibiotics for the duration of therapy. Of those included, 65.4% were female and the average age was 64.9 years in the oral group, compared to 71.5 years in the IV group. Of those in the oral group, 11.9% had an indwelling device and 6% were immunocompromised, compared to 15% and 10% in the IV group, respectively. The majority of patients had a urinary infection source, with the most common isolated organism being Escherichia coli. The most common parenteral antibiotic administered was ceftriaxone, with most patients in the oral group being transitioned to cefdinir. The average length of stay was 18.7 (±17.3) days in the IV group, compared to 6.3 (±12.0) days in the oral group (95% CI -18.2 to -6.6, $p < 0.0001$). Average duration of therapy in the IV group was 11.4 (±3.0) days, compared to 13.0 (±3.0) days in the oral group (95% CI 0.53 to 2.65, $p=0.0039$). Among patients in the oral group, the average length of stay was 5.6 (±17.8) days in those transitioned to oral therapy early, compared to 6.9 (±4.0) days in those who were not (95% CI -5.6 to 3.0, $p =0.5606$). Treatment failure was low in both groups, occurring in 4.2% patients in the oral group versus 10% in the full IV group ($p = 0.1708$).

Conclusions: Among patients with GNR bacteremia, those who were transitioned to oral antibiotics had a significantly shorter LOS compared to those remaining on IV therapy, although duration of therapy was significantly longer. Within the oral therapy group, LOS was significantly shorter in those transitioned to oral antibiotics early. Although the results of this study are descriptive, it further supports current evidence demonstrating that oral antibiotics may be effective in patients with uncomplicated GNR bacteremia and may shorten hospital LOS. Limitations of this study include the small number of patients who were immunocompromised or had indwelling devices, limiting application to these populations, and the small rate of treatment failure which prevents the outcome from being analyzed for statistical significance. More studies should be conducted to include broader patient populations and further analyze the effect that transitioning to

oral antibiotics may have on treatment failure rates.

global: Y

5:00pm – 5:15pm M **Impact of Required Stop Times for Continuous Intravenous Fluid on Duration of Fluid Therapy** Athena C

Moderators: Jonathan Schnider
Presenters: Lauren Hudson
Evaluators: Brandon Sucher

Title: Impact of Required Stop Times for Continuous Intravenous Fluid on Duration of Fluid Therapy

Authors:
Lauren Hudson
Jessica Briscoe
Christopher Wilson

Background:
While continuous intravenous (IV) fluids are widely administered, inappropriate use is associated with significant adverse effects, including increased risk of fluid overload, electrolyte disturbances, and mortality. Despite these complications, recommendations regarding continuous IV fluids are lacking. At the study institution, a required IV fluid duration was implemented in the electronic medical record, which mandates a provider to schedule a stop time on continuous IV fluids when placing the initial order. This study aimed to determine the effect of preemptive stop times for continuous IV fluids on duration of fluid therapy and patient outcomes.

Methods:
This single center, retrospective, observational study was approved by the Institutional Review Board. Adult patients admitted to the general ward on a hospitalist service for at least 24 hours with orders for continuous IV fluids for at least 12 hours were included. Exclusion criteria included requirement for renal replacement therapy prior to admission or receipt of continuous fluids for cancer-related complications (i.e. tumor lysis syndrome), dysnatremias, pancreatitis, rhabdomyolysis, diabetic ketoacidosis, high output fistulas, total parenteral nutrition, or sepsis. The primary outcome of this study was to compare the duration of fluid therapy pre-and post-implementation of required stop times on continuous IV fluid orders. Duration of fluid therapy was assessed until hospital discharge or through 30 days after initiation. Secondary outcomes of this study included comparison of total volume of continuous fluids administered through day 5, hospital length of stay (LOS), incidence of intensive care unit (ICU) admission related to fluid overload, and any incidence of electrolyte disturbances throughout fluid administration. Nominal data was analyzed using a Chi-square or Fischer’s exact test. Continuous data was analyzed via Student’s t-test or Mann-Whitney U.

Results:
A total of three hundred and fifty patients were included. Median duration of fluid therapy at 30 days was shorter in the post-protocol group compared to the pre-protocol group (1 day vs 2 days, p-value < 0.001). Median maintenance fluid volume at day 5 was lower in the post-protocol group compared to the pre-protocol group (1875 mL vs 3100 mL, p-value < 0.001). There were statistically significant reductions in the incidence of electrolyte disturbances, fluid overload, diuretic requirement, and increased oxygen requirements in the post-protocol group.

Conclusions:
Implementation of a required stop time on continuous IV fluids orders reduced the duration of fluid therapy and volume of fluids administered. Further evaluations should be performed to assess the role that required stop times play in reducing hospital costs.

global: Y

5:00pm – 5:15pm T **The Impact of Pharmacist Discharge Education in Preventing Acute Heart Failure Rehospitalizations** Athena I

Moderators: Hania Zaki
Presenters: Itea Thomallari
Evaluators: Erin Massarello

TITLE: The Impact of Pharmacist Discharge Education in Preventing Acute Heart Failure Rehospitalizations

AUTHORS: Itea Thomallari, Brian Knott, Brian Morini, Anny MacDonald

BACKGROUND: Congestive heart failure remains a significant cause of hospital readmissions, leading to increased morbidity, mortality, and healthcare costs. Pharmacists are uniquely positioned to intervene in the management of heart failure due to their expertise in medication therapy and patient education. Effective pharmacist-led discharge education can enhance patient understanding of their medications, address barriers to adherence, and improve overall health outcomes. This study aims to evaluate the impact of targeted pharmacist discharge education and the feasibility of implementing such a practice to the pharmacist's daily workflow for acute heart failure patients.

METHODS: This was a single-center, prospective pilot study with pre-posttest design taking place at AdventHealth Winter Park from November 25, 2024 through January 22, 2025. Patients were eligible for enrollment if they met the following inclusion criteria: age ≥ 65 years, NT-pro BNP >900 pg/mL, American College of Cardiology/American Heart Association stage C or D heart failure, New York Heart Association class II-IV heart failure, left ventricular ejection fraction 15-70%, admitted for acute congestive heart failure, and had a pharmacist reviewed admission medication reconciliation review and discharge medication reconciliation review. Patients were excluded if they were currently on renal replacement therapy or had a life expectancy of <6 months. The patients in the post-test phase received a pharmacist reviewed admission medication reconciliation, discharge medication reconciliation as well as pharmacist discharge heart failure counseling. The primary endpoint of the trial was the number of barriers to medication adherence resolved at the time of counseling. The barriers included lack of understanding, cost prohibitive, side effects, or other. Secondary endpoints included the duration of the education sessions, 30-day readmission rates, and patient mortality rate.

RESULTS: A total of 41 patients met the above inclusion criteria, with 13 patients receiving pharmacist counseling in the post test phase and the remaining 28 patients who were reviewed in the pre-counseling arm receiving the pharmacist standard of care. The average number of barriers resolved at the time of counseling was one with a median counseling duration of 20 minutes (IQR 12.5-30). 30-day readmission rates and mortality p-values were 0.5696 and 0.7852, respectively.

CONCLUSION: Targeted pharmacist discharge education improved patients’ understanding of their medication regimens. Although this study was not powered to detect differences in 30-day readmission or mortality rates, addressing these barriers has the potential to influence these outcomes. Further research is needed to evaluate the impact on mortality and hospitalizations. However, integrating this counseling into the pharmacist workflow presents challenges due to its time-intensive nature and the need for additional pharmacist support. While the benefits of counseling are evident, its implementation may not be feasible without additional staffing to manage the increased workload.

global: Y

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) F Informatics (INF) L Internal Medicine (IM) M Medication Safety (MES)

O Oncology (ONC) P Pain Management (PM) D Pediatric (PED) S Psychiatric Pharmacy (PSY)

T Transitional Care (TC) 1 Transplant (TRP)

APRIL 25 • FRIDAY

8:30am – 8:45am A **The Implementation of a Passive Bin-Based Perpetual Medication Inventory Model within Ambulatory Clinics at an Academic Medical Center** Olympia 1

Presenters: Elly Glazier

Evaluators: Stephanie Ring, Abbi Rowe

Title: The Implementation of a Passive Bin-Based Perpetual Medication Inventory Model within Ambulatory Clinics at an Academic Medical Center

Authors: Elly Glazier, Jared Gabbert, Grayson Peek

Background: Ambulatory clinics store and dispense high-value medications with little visibility into inventory quantity or product movement. Automated dispensing cabinets are frequently used within inpatient settings to combat this issue but are a large capital investment for the clinic setting. In current state, pharmacies and clinics follow complex workflows to manage the inventory of high-value medications to meet patient demand while minimizing drug waste. This has led to unrealized opportunities in inventory optimization due to large information gaps. We assessed a passive bin-based inventory model that leverages a system that records every transaction by a clinic team member. The system records these transactions in real time via light sensors and can both register the removal and replacement of medication products. The system then uses artificial intelligence and various algorithms to recommend inventory optimizations via the assessment of the recorded medication transactions and notably requires no electronic health record integration.

Methods: This study was conducted over 10 weeks and included select medications at two ambulatory locations. We assessed if the utilization of a passive bin-based inventory model within ambulatory clinics allowed for a decrease in inventory on-hand valuation. Inventory valuation was assessed prior to implementation and following system recommendations at the conclusion of the pilot. Accuracy of the system was validated via twice weekly manual cycle counts. The primary outcome was the valuation of the inventory on hand change recommended by the system at the conclusion of the evaluation. Secondary outcomes included the accuracy of the system as well as the outcome of a comparison of pre- and post- implementation satisfaction surveys (modified MAS-NAS) offered to nursing staff, as well as the cost of facility modifications required for implementation.

Results: The passive bin-based inventory recorded 3,454 dispenses during the study period. The average days on hand tabulated ranged from 1.5 days to over 30 days. The total inventory valuation decrease across both clinics included 69 product units for a total of $34,000 of average wholesale price. The accuracy of the model was established to be 84.6% at the neurology site and 96.3% at the orthopedics site. Though not extrapolatable due to volume, the results of the modified MAS-NAS nursing satisfaction survey showed a negative change from pre- to post- survey but notably were generally positive regarding the post implementation passive bin-based technology questions.

Conclusions: In this retrospective pre and post implementation study, the utilization of passive bin-based perpetual medication inventory models reduced inventory on hand valuation but was not statistically significant. Additionally, the model offers the opportunity to greatly increase inventory visibility in a difficult to manage care setting. Additional studies that assess benefits of visibility with powered results should be considered as the implementation of this model improves.

global: Y

8:30am – 8:45am B **Assessing Provider Awareness and Confidence in Prescribing Connected Insulin Pens for Diabetes Management** Athena D

Moderators: Katrina White, PharmD, BCACP
Presenters: Caroline McKenna
Evaluators: Cori Edmonds

Title: Assessing Provider Awareness and Confidence in Prescribing Connected Insulin Pens for Diabetes Management

Authors: Caroline McKenna, PharmD & Casey Wells, PharmD, BCACP, CPP

Objective: Determine provider readiness and confidence in prescribing connected insulin pens, caps, or buttons and comfortability in assessing generated reports.

Self-Assessment Question: What is one benefit to using connected insulin pens (CIPs) for diabetes management?

Background:

Although there have been significant technological advancements around insulin delivery for the management of diabetes, some devices are underutilized due to lack of provider awareness. Connected insulin pens (CIPs) and pen caps offer an additional method for diabetes management in outpatient clinics. Various products, like the Abbott Bigfoot Pen, Lilly Tempo Button, Medtronic InPen, and NovoEcho Pens allow tracking of basal and/or bolus dosing, calculations for doses, and timing of insulin on board via Bluetooth and iOS/Android Smartphone applications. This study sought to assess provider readiness and confidence in prescribing connected insulin pens, caps, or buttons and comfortability in assessing generated reports.

Methods:

Baseline CIP prescribing levels were assessed through an internal dashboard for the four CIPs mentioned above. A survey was then distributed to 50 prescribers to investigate awareness of CIP products, who may qualify for use, comfortability in prescribing, and confidence in evaluating CIP-generated reports to adjust settings. Answers were provided via a Likert Scale (ex: 1 = Very Low Confidence and 5 = Very High Confidence). The final question from the survey asked how respondents would like to best learn about CIPs between a variety of modalities.

Results:

This abstract describes baseline prescribing trends and results from prescribers' readiness and confidence survey. Only 24 CIPs were prescribed by providers at baseline, with 95.8% being prescribed in the Internal Medicine and Endocrinology Clinic. Based on the initial survey results, 66% of responders had not heard of CIP technology. Of those who did have knowledge of CIP products, more than 75% had less than medium confidence in identifying patients who may qualify CIPs, with mixed opinions for patients who may qualify. The preferred learning methods for education about CIPs included live presentation by a pharmacist and a comparison sheet of available products.

Conclusions:

More education around connected insulin pens and pen caps is needed for prescribing providers caring for patients with diabetes. Educational sessions have been scheduled and comparison table compiled with intent to re-survey post-session and present at future conferences.

global: Y

8:30am – 8:45am B **From Chatroom to Classroom: Enhancing Pharmacy Students' Patient Counseling Skills with AI** Athena C

Moderators: Devki Gajera

Presenters: Sarah Thompson

Evaluators: Erin Himes

Background:

Effective communication skills are essential for pharmacy students, as they directly impact patient care and counseling quality. Traditional methods such as role-playing, simulated patients, and virtual patient interactions are commonly used in pharmacy education to enhance these skills. However, these approaches have notable limitations, including increased faculty workload, the need for trained standardized patients, and the high cost and potential technical challenges of virtual simulation software. The integration of artificial intelligence (AI) presents an innovative solution to address these challenges. The purpose of this study was to assess first-year pharmacy student confidence gains in communicating with patients using an AI chatbot in a communications course.

Methods:

First-year pharmacy students at the University of Georgia College of Pharmacy participated in this study. ChatGPT prompts were developed to simulate patient interactions, guiding the chatbot to engage with students as if they were patients picking up a new prescription. Embedded rubrics assessed students' soft skills, accuracy of medication counseling, and use of PRIME questions. The chatbot provided real-time feedback on strengths and areas for improvement.

Electronic surveys measured students' confidence before and after a graded standardized patient activity. Confidence was assessed across seven domains: patient introduction, patient interviewing, use of probing questions, active listening, nonverbal communication, patient-centered education, and provision of accurate medication information. Students initially registered for ChatGPT and completed a pre-survey capturing demographics and baseline counseling confidence. They then engaged in a chatbot-guided counseling session before a week-long independent practice period. A post-survey followed the first graded standardized patient session to evaluate changes in confidence. Students had the option to use the chatbot again before a second graded encounter, after which they completed the same post-survey. Descriptive statistics analyzed demographic data, and a Wilcoxon Signed Rank Test assessed changes in confidence based on pre- and post-survey results following chatbot utilization.

Results

A total of 145 first-year pharmacy students enrolled in the Pharmacy Intercommunications course at the University of Georgia. Of these, 117 completed all components of pre- and both post-surveys. Among pre-survey respondents (n=126), 70.3% reported pharmacy work experience, with 60.7% (n=88) having experience in a community setting. Additionally, 57% (n=72) had at least one year of work experience. Prior to the study, 62.8% had used ChatGPT, while 35.9% reported feeling comfortable using it. A Wilcoxon Sign-Rank Test indicated that median post-survey ranks for confidence across all 7 confidence domains were statistically significantly higher than the pre-survey ranks. The largest changes were seen in confidence introducing oneself to the patient and stating the purpose of the interview ($Z=6.82$, $p<0.001$), interviewing and assessing patient knowledge by using PRIME questions ($Z= 6.954$, $p<0.001$), using probing questions to clarify information ($Z=6.941$, $p<0.001$), tailoring counseling to meet patient specific needs ($Z= 5.457$, $p<0.001$), and providing complete and accurate information during the counseling session ($Z= 5.19$, $p<0.001$). A Wilcoxon Sign-Rank Test comparing confidence between the first post-survey and the second post-survey indicated that median post-survey ranks for confidence were statistically significant across all domains with the exception of confidence in the ability to demonstrate active listening ($Z=0.885$, $p=0.376$) and confidence in communicating interest and confidence through body language ($Z=1.825$, $p=0.068$).

Conclusions

Incorporating an AI chatbot as a counseling tool in the classroom resulted in a statistically significant increase in first-year pharmacy students' confidence when counseling a graded simulated patient. These findings highlight the potential of AI as an effective educational tool to enhance student learning.

global: Y

8:30am – 8:45am R **Comparison in Clinical Outcomes with Lorazepam vs. Midazolam use in Patients Admitted to a Community Hospital for Alcohol Withdrawal** Athena G

Moderators: Tia Collier
Presenters: Caitlin Ferguson
Evaluators: Sarah Frye

Title: Comparison in Clinical Outcomes with Lorazepam vs. Midazolam use in Patients Admitted to a Community Hospital for Alcohol Withdrawal

Authors: Caitlin Ferguson, Stephen Melton

Background: Alcohol withdrawal is an urgent medical condition which occurs when an individual disrupts or discontinues regular alcohol consumption. The Clinical Institute Withdrawal Assessment for Alcohol (CIWA) is a widely used tool for assessing the severity of alcohol withdrawal symptoms and guiding treatment (1). Current guidelines state longer acting benzodiazepines are preferred due to clinical benefits and longer duration of action (2). Recent drug shortages have led to a shift toward using alternative medications such as midazolam in place of the traditional protocolized lorazepam. By comparing outcomes of each benzodiazepine, healthcare providers can make informed decisions about treatment alternatives.

Methods: Baptist Health Lexington implemented a protocol to utilize midazolam in lieu of lorazepam during a period of drug shortage. This retrospective study analyzes local clinical outcome data comparing the use of lorazepam and midazolam in patients with alcohol withdrawal before and after the ASHP-designated lorazepam drug shortage in February 2023. Data will be analyzed via review of hospital electronic medical record six months prior and six months after the protocol initiation. The primary outcome is to evaluate the differences in hospital length of stay in number of days for each treatment regimen. The following secondary outcomes will also be assessed: maximum and average CIWA score, total number of lorazepam equivalents administered, and ICU length of stay. Appropriate statistical tests will then be analyzed to assess the clinical outcomes of the two medications. The data collected will be de-identified from individual patient charts and presented only in aggregate.

Results: In progress

Conclusions: In progress

global: Y

8:30am – 8:45am R **Comparison of purge reliability between heparin- and bicarbonate-based purge solutions during Impella support** Athena H

Moderators: Rebecca Orr
Presenters: Jessica Donald
Evaluators: Martin Gordon

Title: Comparison of purge reliability between heparin- and bicarbonate-based purge solutions during Impella support

Author Names: Jessica Donald, Breanne Mefford, Bryan Love, Jenna Cox

Background: Impella heart pumps are temporary mechanical circulatory support (MCS) devices used beyond procedural settings in patients with cardiogenic shock to support heart function by unloading the right or left ventricle. A solution is utilized to suppress denatured protein or thrombus deposition within the purge gaps of the Impella device. Heparin-based purge solutions are recommended by the device manufacturer, who advises against the use of non-heparin anticoagulants within the purge solution. While direct thrombin inhibitors were initially explored as a purge solution option for patients with heparin-induced thrombocytopenia, pump failures and other complications have been documented with their use. Sodium bicarbonate has emerged as an alternative, stabilizing the pump without affecting systemic heparin levels, simplifying anticoagulation management. Although FDA-approved in April 2022 for patients intolerant to heparin, data related to its clinical use remains limited.

Methods: This retrospective, observational cohort study aims to assess the efficacy of a sodium bicarbonate-based purge solution as an alternative to heparin-based purge solutions for patients receiving Impella support. The primary outcome will focus on purge reliability, defined as a composite measure of: a 25% increase in purge pressure from baseline, and/or a 50% reduction in purge flow rate (for index flow rates >15 mL/hr) or a 30% reduction (for index flow rates ≤15 mL/hr). Secondary outcomes will include the individual components of the primary composite outcome, along with the use of alteplase in the purge solution, as well as variations in purge flow rates and pressures.

Results: In Progress

Conclusion: In Progress

global: Y

8:30am – 8:45am R **Evaluation of inappropriate stress ulcer prophylaxis continuation after discharge from the intensive care unit** Athena I

Moderators: Charleen Melton, PharmD, BCCCP
Presenters: Abigail McBrayer
Evaluators: Brittny Medenwald

Title: Evaluation of inappropriate stress ulcer prophylaxis continuation after discharge from the intensive care unit

Authors: Abigail McBrayer, Jamarius Carvin, Elaina Etter, Rachele Hollis

Background/Purpose: Critically ill patients that require admission to the intensive care unit (ICU) are at an increased risk of gastrointestinal (GI) stress ulcers. Stress ulcer prophylaxis (SUP) is achieved through proton pump inhibitors (PPIs) or histamine-2 receptor antagonists (H2RAs) administration. While the optimal duration of SUP therapy is unclear, current literature recommends discontinuing SUP upon resolution of risk factors, most commonly at the time of discharge from the ICU. Inappropriate SUP continuation can negatively affect both the patient and the hospital system. This study evaluates the rate of inappropriate continuation of PPIs or H2RAs for SUP after ICU discharge.

Methods: This study was a single-center, retrospective chart review from May 1, 2023, to October 31, 2023. Patients qualified for inclusion if they were greater than 18 years of age, received SUP during their ICU stay, were discharged from the ICU to an intermediate care unit or acute care floor, and had an active SUP order upon transfer to the non-ICU area. Patients were excluded if they had pre-existing conditions requiring acid suppressive therapy (AST) including gastroesophageal reflux disease, peptic ulcer disease, Barrett's esophagus, and dyspepsia, were discharged directly from ICU to another healthcare facility, or were on appropriately continued AST. The primary outcome was the percentage of patients inappropriately continued PPIs or H2RAs at discharge from the ICU. Inappropriate continuation was defined as patients being continued on SUP after discharge from the ICU, when there are little to no risk factors to warrant the use of SUP. Secondary outcomes included healthcare costs, length of time on inappropriate AST, and the number of patients discharged home with a PPI or H2RA.

Results: Throughout the study period, 406 patients were assessed for inclusion, with 180 meeting inclusion criteria. The leading reason for exclusion was patient death before ICU discharge, accounting for 55 patients (24%)

global: Y

8:30am – 8:45am | **Analysis of Prosthetic Joint Infections in a Community Hospital** Athena A

Moderators: Joseph Kohn
Presenters: Sydney Hege
Evaluators: Melissa Padgett

Title: Analysis of Prosthetic Joint Infections in a Community Hospital

Authors: Sydney Hege, Heather Gibson, Allison Cid, Gretchen Arnoczy

Background: Joint replacement surgery has become a common surgical procedure for patients and improves independence, mobility, and quality of life. Prosthetic joint infections (PJIs) are a serious complication of prosthetic joint implantation and must be managed appropriately. Management of infections vary from practice to practice and current guidelines offer a range of recommendations. This study aims to compare the treatment of PJIs at FirstHealth of the Carolinas to current guideline recommendations.

Methods: Eligible participants were identified via retrospective chart review using electronic medical records from March 1st, 2022, through September 30th, 2023. This 18 months of data was censored at 12 months post-infection and included data from all FirstHealth of the Carolinas facilities. Patients were included if they were ≥ 18 years old, diagnosed with a PJI at FirstHealth, treated by an Infectious Disease (ID) physician, and discharged on outpatient parenteral antibiotic therapy (OPAT). Only pregnant patients were excluded. The primary objective was to analyze initial antimicrobial treatment duration of PJIs, utilization of rifampin in staphylococcal infections, and use and duration of suppressive antimicrobials compared to Infectious Diseases Society of America (IDSA) guideline recommendations. Secondary objectives include evaluating Clostridioides difficile infection (CDI) rates, antimicrobial complications, and prolonged or recurrent infection within 12 months of surgery for confirmed PJI. All data collected was de-identified and only the primary investigators have access to the data via a password encrypted file.

Results: A total of 95 patients were identified. 10 patients were duplicates, leaving 85 patients included in this IRB-exempt study. Patient characteristics evaluated included age, gender, body mass index (BMI), type of prosthetic joint, diabetes diagnosis, time since initial surgery to diagnosis of PJI, and tobacco use. The majority of PJIs were categorized as late infections (47%), followed by delayed (27%), and early infections (22%). The main prosthetic joints infected were knee (64%) followed by hip (27%), while causative organisms included staphylococcus aureus (37%), followed by non-aureus staphylococcus (22%) and streptococcus species (14%). PJI procedures included debridement, antibiotics, and implant retention (DAIR) (31%), 1 stage (41%), 2 stage (2%), and our modified 2 stage procedure (22%). During this time frame, 2200 hip and knee surgeries were performed at FirstHealth. Out of 85 PJIs, 45 patients had their initial surgery at FirstHealth, estimating an annual rate of PJIs at FirstHealth of 0.83% compared to 1-2% in the U.S. The initial intravenous (IV) antimicrobial treatment duration of 4-6 weeks per IDSA guidelines was achieved in 82 of 85 patients (96%), while the use of adjunctive rifampin for staphylococcal PJIs was utilized in 15 of 39 eligible patients (38%). The use of suppressive oral antimicrobials after IV therapy is recommended in DAIR or 1 stage procedures and 54 of 61 eligible patients (89%) received suppression. The secondary objectives included a CDI rate of 1 in 85 patients (1.2%), 16 reported IV antimicrobial complications, and 9 of 85 patients (10.6%) experienced a prolonged or recurrent infection.

Conclusion: In this study, results show that FirstHealth’s current standard of practice for managing PJIs mostly aligns with IDSA guideline recommendations. Of note, there is room for improvement in our duration of oral suppression and rifampin utilization in managing these infections. However, there were low rates of complications, including CDI, as well as a low rate of prolonged or recurrent infection in this population. Further steps should be taken to assess the need for a standardized protocol for the treatment of PJIs at FirstHealth of the Carolinas.

global: Y

8:30am – 8:45am | **Optimizing Metronidazole Administration: A Comparative Analysis of Every Twelve Hours Versus Every Eight Hours Dosing for Anaerobic Infections** Athena B

Moderators: Allie Hale, Christele Francois

Presenters: Taylor Merritt

Title: Optimizing Metronidazole Administration: A Comparative Analysis of Every Twelve Hours Versus Every Eight Hours Dosing for Anaerobic Infections

Authors: Taylor J. Merritt, Kat Petersen, Benjamin Albrecht, Sujit Suchindran, Sarah B. Green
Emory University Hospital- Atlanta, GA

Background: Metronidazole has historically been the drug of choice for anaerobic infections, conventionally dosed every eight hours. Its hydroxy metabolite can exhibit 30-65% activity of the parent drug and has a half-life extending up to 11.65 hours. Serum levels of metronidazole exceed the minimum inhibitory concentration at twelve hours for most anaerobes. Thus, an argument that can be made for dosing every twelve hours for most anaerobic infections. The objective of this study is to determine the probability that patients receiving oral or intravenous metronidazole at a dosing frequency of every twelve hours would have a more or equivalent desirable outcome, measured by desirability of outcome ranking (DOOR), than patients receiving a traditional, every eight hours frequency for the treatment of confirmed anaerobic infections.

Methods: This was a retrospective, quasi-experimental, multi-center analysis which reviewed adult patients who received metronidazole for the treatment of confirmed anaerobic infections. Included patients received 500 mg doses of intravenous or oral metronidazole at a dosing frequency of eight or twelve hours, for at least 72 hours in duration. Patients were excluded if the indication for metronidazole was hepatic encephalopathy, surgical prophylaxis, or treatment of *Clostridioides difficile*, central nervous system, parasitic, sexually transmitted, or *Helicobacter pylori* infections. Those who received metronidazole every eight hours for ≥ 72 hours before transition to every twelve hours, received concomitant antibiotics with anaerobic coverage for ≥ 72 hours, or had an organism with documented resistance to metronidazole were also excluded. The primary outcome was the probability that a patient receiving metronidazole every twelve hours would have a more or equivalent desirable outcome than a patient receiving every eight-hour dosing. Secondary outcomes included an assessment of outcomes specific to the subgroup of immunocompromised patients in the study.

Results: Baseline demographics were similar between the two groups. The majority of included patients were male (55%), Black (62%), and had an average age of 61 years. The average length of stay was 22 days overall, which was also comparable amongst groups. The overall DOOR distribution between groups was similar and there was no significant difference in the probability of a more desirable outcome for patients who received metronidazole every twelve hours compared to traditional every eight-hour dosing (51.3% [95% CI: 43.5%, 59.0%]; p-value= 0.7417). Of the individual DOOR components, there was a statistically significant difference in treatment failure with a higher probability of desired result (i.e. treatment success) in the every twelve-hour dosing group (p-value= 0.021). Analysis of the immunocompromised subgroup also found no difference in probability of desirable outcomes (45.9% [95% CI: 30.1%, 62.6%]; p-value= 0.6388).

Conclusion: We found no significant differences in desirable outcomes between the dosing groups for total study patients and the immunocompromised subgroup. The results discussed above included criteria for the DOOR analysis such as treatment failure, unsuccessful discharge, adverse effects, and transition to hospice or death. This provides evidence to support that every twelve hours dosing of metronidazole could be considered over every eight hours for most anaerobic infections, due to the similar DOOR ranking in addition to the time saving component, increased convenience for nursing staff, and expected reduction in cost in contrast to dosing every

eight hours.

global: Y

8:30am – 8:45am L **Effect of Antidepressant Continuity on Analgosedation in Mechanically Ventilated Patients** Parthenon 1

Moderators: Margaret Williamson
Presenters: Isabelle Perling
Evaluators: Emily Johnson

Title: Effect of Antidepressant Continuity on Analgosedation in Mechanically Ventilated Patients

Authors: Isabelle Perling, Sarah Blackwell, Kenda Germain, John Michael Herndon

Objective: Assess the effect of antidepressant continuity or discontinuity on analgosedation in mechanically ventilated patients.

Self Assessment Question: True or False: Abrupt cessation of antidepressants can cause antidepressant discontinuation syndrome that typically occurs in patients using SSRI or SNRI medications with short half-lives.

Background: Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) are first line treatment options for depression and anxiety and are used for many other psychiatric disorders. In critically ill patients with mental disorders, psychiatric symptoms may be heightened due to a change in environment and physical condition. Despite this, many antidepressants are not continued in the critical care setting for various reasons. Abrupt cessation of antidepressants can cause antidepressant discontinuation syndrome (ADS), with symptoms including agitation, mood changes, insomnia, dizziness, nausea, and vomiting. ADS has a mean onset of two days after discontinuation and is most common in patients using agents with short half-lives. The syndrome can mimic hyperactive intensive care unit (ICU) delirium, which may lead to increased sedative doses to maintain goal sedation, while the underlying cause is left untreated.

Methods: This is a single center, retrospective chart review in patients who were on SSRI or SNRI therapy prior to a hospitalization where they were subsequently intubated. Included patients were 18 years of age or older, receiving outpatient SSRI or SNRI therapy prior to hospitalization, and initiated on mechanical ventilation within 48 hours of admission. Patients with current substance abuse, need for deeper sedation, acute neurological events, chronic invasive mechanical ventilation, pregnancy, or incarceration were excluded. Patients who restarted SSRI or SNRI therapy between 49 and 72 hours were also excluded. Outcomes were compared between patients who resumed their SSRI or SNRI within 48 hours of intubation and patients for whom their SSRI or SNRI was held for more than 72 hours after intubation. The primary endpoint was the dose of IV analgosedation at 72 hours represented by the fraction of IV sedation score (FISS). FISS is a novel scoring system created to compare analgosedation medications and doses for patients on various agents. It is calculated by dividing the dose of each analgosedation agent by the typical maximum dose at the facility. Each of these are then added together to create the numerical FISS. Secondary endpoints included FISS at 24 and 48 hours, RASS at 24, 48, and 72 hours, ICU and hospital lengths of stay, duration of mechanical ventilation, and duration of IV analgosedation. Statistical tests included the student’s t-test and the Wilcoxon rank sum test.

Results: Forty patients were analyzed. FISS was similar between patients who continued their antidepressant and the discontinuity group at 72 hours post intubation, 0.95 ± 1.02 vs. 0.60 ± 0.66 (p = 0.194). There was no difference in FISS at 24 and 48 hours, RASS, ICU and hospital LOS, and duration of mechanical ventilation or analgosedation.

Conclusion: Antidepressant continuity did not result in a difference in analgosedation needs or other outcomes. The novel FISS offers a practical way to compare analgosedation needs across various agents but needs external validation for external use.

Contact information: isabelle.perling@orlandohealth.com

global: Y

8:30am – 8:45am L **Effectiveness and safety of high-dose unfractionated heparin for venous thromboembolism prophylaxis in obese patients** Parthenon 2

Presenters: Amber Devillier

Evaluators: Jason Dover

Title: Effectiveness and safety of high-dose unfractionated heparin for venous thromboembolism prophylaxis in obese patients

Authors: Amber DeVillier, Lacey Ioppolo, Mallory Stringer, Eric Shaw

1. Background: Venous thromboembolism (VTE), which includes deep vein thrombosis (DVT) and pulmonary embolism (PE), is a preventable condition causing 60,000 to 100,000 deaths annually in the United States. DVT involves thrombus formation in extremities, while PE occurs when a thrombus blocks a pulmonary artery. Risk factors include Virchow's triad which consists of venous stasis, endothelial injury, and hypercoagulability. Obesity, an independent VTE risk factor, promotes inflammation, impaired fibrinolysis, and procoagulant activity. The CDC defines obesity as a BMI ≥ 30 kg/m². Hospitalized patients face increased VTE risk due to immobility and surgical endothelial injury. Chemical prophylaxis, such as unfractionated heparin (UFH), low molecular weight heparin (LMWH), or fondaparinux, is essential. Standard dosing of UFH is 5,000 units subcutaneously every 8 hours. In patients with an increased BMI the dosing parameters are not as clear. The dosing for DVT prophylaxis in patients with obesity ranges from 5,000 to 7,500 units subcutaneously every 8 hours. Studies on high-dose UFH of 7,500 mg subcutaneously every 8 hours in obese patients show mixed outcomes, with potential bleeding risks in class III obesity (BMI ≥ 40 kg/m²). Further research is needed to clarify optimal dosing regimens by BMI and assess safety and efficacy.

2. Methods: This was a single-center, retrospective chart review of patients that were started on either standard-dose UFH of 5,000 mg subcutaneously every 8 hours or high-dose UFH of 7,500 mg subcutaneously every 8 hours for DVT prophylaxis between January 2018 and September 2024. Patients were included if they were 18 years old or older, received either standard-dose or high-dose UFH within 48 hours of admission, and if their BMI was ≥ 40 kg/m² and body weight ≥ 120 kg. The primary outcome was incidence of new VTE during hospital stay. The secondary outcomes included any bleeding that resulted in discontinuation and a composite of ISTH major bleeding.

3. Results: A total of 352 patients were screened, with 108 patients included in this study. There were 83 patients in the standard-dose UFH group and 25 in the high-dose UFH group. The primary outcome was not statistically different between standard-dose compared to high-dose (2.4% vs 0%; p-value 1.000). The secondary outcome of composite ISTH major bleeding was also not significantly different between standard-dose and high-dose (18.1% vs 32%; p-value 0.252). When looking at individual components of ISTH major bleeding, there were significantly more rates of blood transfusions in the high-dose group compared to the standard-dose group (12% vs 1.2%; p-value 0.038). The secondary outcome of UFH prophylaxis discontinuation due to bleeding occurred in 2 (1.9%) of patients in standard-dose group and none of the patients in the high-dose group.

4. Conclusions: This study showed that there was no difference in the incidence of new VTE between high-dose and standard-dose UFH, but notably, high-dose UFH was associated with more blood transfusions.

Contact Amber DeVillier (amber.devillier@hcahealthcare.com) with any questions.

global: Y

8:30am – 8:45am

O **Impact of Pharmacist-Led Transitions of Care Services for Patients Discharging on Oral Chemotherapy** Olympia 2

Moderators: Kristen Kilby

Presenters: Sang Park

Title: IMPACT OF PHARMACIST-LED TRANSITIONS OF CARE SERVICES FOR PATIENTS DISCHARGING ON ORAL CHEMOTHERAPY

Authors: Nathan Park, Courtney Mallon, Ashley Mull

Objective: To determine the effect of pharmacist-led transitions of care services for patients discharging on oral chemotherapy at the University of Tennessee Medical Center.

Background:
Oral anticancer therapies have changed the course of therapy in a growing number of malignancies that have traditionally been managed with intravenous (IV) chemotherapy. The increasing use of oral anticancer therapies benefits patient convenience and quality of life. However, several challenges now exist for patients from medication procurement, adherence, and safe handling and administration of these agents. Pharmacists are uniquely trained to improve outcomes through increased medication adherence, patient knowledge, and drug monitoring. This study aims to determine the effect of pharmacist-led transitions of care (TOC) services for patients discharging on oral chemotherapy at the University of Tennessee Medical Center.

Methods:
This prospective, single-center, quality improvement initiative included adult patients being discharged from the inpatient oncology service who filled a prescription for an oral chemotherapy at the University of Tennessee Specialty Pharmacy from January 1st, 2024 to October 1st, 2024. The primary endpoint was the average number of interventions made by oncology pharmacists regarding oral chemotherapy prescribed at discharge. Interventions included in the study included: drug-drug interactions, drug-disease clarification, dosing adjustments (non-renal/hepatic/toxicity), toxicity adjustment, drug acquisition, renal adjustments, hepatic adjustments, and other interventions. Secondary endpoints were the average number of interventions made within 1 week of discharge and the length of time in days between the prescription being sent to the pharmacy and the patient receiving their medication.

Results:
A total of 23 patients were included in the study. At time of discharge, a total of 10 interventions were made with the average number of interventions per patient being 0.43. Of the 10 interventions made at discharge, five of them were involving drug acquisition. At follow-up, four interventions were made for an average number of interventions per patient of 0.17. All follow-up interventions involved patient counseling. The average length of time for patients to receive their medication was 8.83 days with a median (IQR) time of 4 (6.5) days.

Conclusion:
Pharmacists most frequently intervened at time of discharge with most interventions being related to drug acquisition. Follow-up calls resulted in fewer interventions, but all interventions involved patient counseling. The study supports the need for further pharmacist involvement with transitions of care services.

global: Y

8:30am – 8:45am D **Dose-Dependent QTc Prolongation of Methadone in Pediatric Patients** Athena J

Presenters: Kaitlyn Currie

Evaluators: Azur Eckley, Brandon Sucher

Title: Dose-Dependent QTc Prolongation of Methadone in Pediatric Patients

Authors: Kaitlyn Currie, Justin K. Chen, Janae Townsend, Jillian Mantione

Objective: Determine thedose relationshipfor methadone and QTc prolongation in the pediatric population.

Background: Methadone is a synthetic opioid commonly used to wean patients off continuous opioid infusions to prevent withdrawal. Methadone is associated with prolongation of the QTc intervalon electrocardiogram (EKG). In pediatric patients, the dose-dependent relationship of methadone to QTc prolongation has not been established. The primary aim of this study was to investigate the risk of QTc prolongation in pediatric patients maintained on methadone at Children's Healthcare of Atlanta.

Methods: A retrospective chart review of patients less than 18 years old initiated on methadone between January 1, 2023 and April 30, 2024, in the intensive care setting. Patients were excluded if they received methadone for <24 hours, did not have EKG results while on methadone, had a history of long QT syndrome, or if they were on methadone for the following indications: chronic pain, palliative care, and/or addiction.

Results: A total of 79 patients met criteria for inclusion, comprised of 266 EKGs. The median age was 0.91 years (IQR 0.36-5.49) with 40 (50.9%) of patients being male. The median baseline QTc was 424 ms (IQR 408-441) for those who had an EKG prior to methadone initiation. There was no correlation between methadone weight-based dose and length of QTc (r=0.07, p=0.23). An analysis comparing low (<0.25 mg/kg/day), moderate (0.25-0.5 mg/kg/day), and high (>0.5 mg/kg/day) dosing of methadone did not show a difference in QTc among the three groups (p=0.71). A secondary analysis comparing patients with a baseline QTc and their QTc on methadone showed no difference (424 ms versus 430 ms, p=0.24).

Conclusion: This retrospective analysis could not determine a relationship between weight-based methadone dosing and QTc. Patients did not experience a statistically significant difference between their baseline QTc and their QTc on methadone.

global: Y

8:50am – 9:05am

A **Impact of Daily Pharmacist Anticoagulation Review in a Rural Hospital** Olympia 1

Presenters: Grace Kenley

Evaluators: Stephanie Ring, Abbi Rowe

Title: Impact of Daily Pharmacist Anticoagulation Review in a Rural Hospital

Authors: Grace Kenley, Lindsey Arthur

Objective: will be included in presentation

Self Assessment Question: will be included in presentation

Background: Anticoagulants are used for a variety of indications which leads to their frequent administration in hospitalized patients. Whether utilizing anticoagulants for therapeutic indications or for venous thromboembolism (VTE) prophylaxis, dosing is highly individualized to each patient based on factors such as weight and renal function. As patients' clinical statuses can fluctuate from admission to discharge, it is imperative to review the appropriateness of each anticoagulation regimen on a daily basis. The consequences of inappropriate anticoagulation regimens can be severe, including adverse events such as bleeding or thrombosis. Due to these risks, anticoagulants are included on the Institute for Safe Medication Practices (ISMP) list of high alert medications. The purpose of this study is to determine the impact of daily pharmacist review of anticoagulants within a newly implemented floor-based pharmacist model in a rural hospital.

Methods: A prospective cohort study will be conducted on patients admitted to the medical and telemetry floors at Self Regional Healthcare during the hours of 7:00 AM to 3:30 PM on weekdays between February 24th, 2025 through March 26th, 2025. Anticoagulation regimens, both treatment and prophylaxis, will be reviewed on each patient for appropriateness in terms of indication and patient specific factors such as renal function and weight. Patients not on any type of anticoagulation will be reviewed to determine if therapy is warranted. Patients will also be educated on the importance of anticoagulation if refusals are documented. The primary outcome is the number of anticoagulation recommendations made to ensure appropriate therapy. Secondary outcomes include number of dosage adjustments, number of frequency adjustments, number of anticoagulant initiations, number of anticoagulant discontinuations, number of bleeding events, number of thrombotic events, and number of patient educations performed.

Results: Between February 24th, 2025 – March 26th, 2025, 1,046 patients were admitted to medical and telemetry-monitored floors. During this period, 67 anticoagulation recommendations were made. Of the 67 recommendations, 60 were accepted by providers, resulting in a 90% acceptance rate. The most common rejection was the addition of SCDs for patients refusing chemoprophylaxis (4 of the 7 rejections). Results for secondary outcomes are as follows: 29 dosage adjustments, 6 frequency adjustments, 12 initiations, 3 discontinuations, 14 SCDs added on, 2 bleeding events, 1 thrombotic event, and 3 patient educations performed.

Conclusion: Ultimately, having a pharmacist located on the floor increased the number of therapeutically appropriate anticoagulation recommendations which may lead to decreased adverse bleeding or thrombotic events.

global: Y

8:50am – 9:05am B **Clinical Impact of GLP-1 and GIP/GLP-1 Receptor Agonist Access Issues in a Primary Care Setting** Athena C

Moderators: Devki Gajera
Presenters: Alexandra Cochran
Evaluators: Erin Himes

Title: Clinical Impact of GLP-1 and GIP/GLP-1 Receptor Agonist Access Issues in a Primary Care Setting

Authors: Alexandra Cochran, Laura Schalliol, Savannah Owen, Holly Lowe, and Gabriella V Rosellini

Objective:
The primary objective is to evaluate the percent change in HbA1c for the prescribed GLP-1 or GIP/GLP-1 receptor agonist for the treatment group compared to the control group.
The secondary objectives are to evaluate the change in weight and BMI for the prescribed GLP-1 or GIP/GLP-1 receptor agonist for the treatment group compared to the control group and to observe the medication adjustments made to maintain glycemic control in the absence of a GLP-1 and GIP/GLP-1 receptor agonist therapy.

Self Assessment Question: What are some potential strategies to mitigate the impact of GLP-1 and GIP/GLP-1 receptor agonist access issues on patient outcomes?
A. Expanding patient assistance programs
B. Utilizing SGLT2 inhibitors or insulin as alternatives
C. Implementing clinic-based sample programs
D. All of the above

Background: Type 2 diabetes mellitus (T2DM) is a growing global health concern that requires comprehensive management to minimize complications. The complications of T2DM, including cardiovascular disease, chronic kidney disease, neuropathy, and retinopathy, can significantly impact a patient's quality of life and overall health outcomes. Effective management of T2DM includes not only controlling blood glucose levels but also promoting weight management. However, despite significant advancements in diabetes therapies, many patients still struggle to achieve optimal control due to barriers such as medication costs, accessibility, and adherence.
The introduction of glucagon-like peptide-1 (GLP-1) receptor agonists, such as liraglutide, semaglutide, dulaglutide, and exenatide, revolutionized T2DM treatment by providing both glycemic control and weight reduction. The widespread use of GLP-1 receptor agonists has led to improved health outcomes, especially in patients with comorbid cardiovascular disease, and have become a cornerstone in the management of T2DM. Moreover, the recent advent of dual glucose-dependent insulinotropic polypeptide (GIP)/GLP-1 receptor agonist, tirzepatide, has shown significant metabolic effects as well.
Despite the efficacy of these therapies, challenges in accessing GLP-1 and GIP/GLP-1 receptor agonists have emerged as a significant issue for many patients. Medication shortages, delays in prior authorization, and high out-of-pocket costs can impede timely access to these treatments, disrupting the continuity of care. Access barriers are particularly concerning, as they can lead to periods of inadequate glycemic control. Furthermore, patients who experience these disruptions may need to rely on less effective therapies

Methods: This study is a single-center, retrospective cohort analysis that utilizes medical records accessed via the electronic health record. Medical records were screened for patients prescribed any of the studied medications between January 1, 2022, and July 31, 2024. Inclusion criteria included adult patients aged eighteen years or older and having a T2DM diagnosis. Once included, patients were further divided into a treatment group and a control group. Exclusion criteria included patients who were younger than 18 years of age, with either no follow-up documentation or a medication discontinuation due to adverse effects.

Results: A total of 379 patients were reviewed for this study, with 247 patients meeting the inclusion criteria. Of these, 51 patients experienced an access issue with the prescribed GLP-1 or GIP/GLP-1 receptor agonists while 196 were included but did not experience any of the studied access issues. Of the 247 patients included, the

average age was 59.5 years with 49% of the patient population being male.
The average change in HbA1c was -0.42% in the treatment group and -0.75% in the control group (p = 0.2128), indicating no statistically significant difference. Similarly, the average weight change was -1.91 kg in the treatment group and -2.13 kg in the control group (p = 0.7022). BMI changes followed a comparable trend, with an average reduction of -0.7 kg/m2 in the treatment group and -0.75 kg/m2 in the control group (p = 0.812).

Conclusion: Access issues for GLP-1 and GIP/GLP-1 receptor agonists can lead to clinically significant changes in glycemic control, weight, and BMI in patients with T2DM. This study reinforces the need for proactive management strategies and a collaborative approach among healthcare providers to mitigate the effects of access issues on patient health outcomes. Further research is needed to explore the long-term effects of medication access interruptions, including their impact on diabetes-related complications and overall patient outcomes. Additionally, studies should investigate the efficacy of alternative therapies, such as SGLT2 inhibitors or insulin regimens, in maintaining glycemic control when GLP-1 and GIP/GLP-1 receptor agonists are unavailable.

global: Y

8:50am – 9:05am B **The impact of a Mental Health Pharmacotherapy Clinic at a Federally Qualified Health Center** Athena D

Moderators: Katrina White, PharmD, BCACP

Presenters: Michaelyn Moretz

Evaluators: Cori Edmonds

Authors**:** Michaelyn Moretz, PharmD; Carrington Royals, PharmD; Sara Messier, PA-C; Reagan K. Barfield, PharmD, BCPS; P. Brandon Bookstaver, PharmD, FCCP, FISDA, BCPS; Robert Bailey

Objective: The purpose of this study is to assess whether pharmacist impact in mental health services will provide increased access to services and improved patient outcomes at a medically underserved Federally Qualified Health Center (FQHC) as compared to clinician interventions.

Self-Assessment Question: Which of the following areas of behavioral health are pharmacists able to make an impact in? Select all that apply.

A. Prescribing and monitoring psychiatric pharmacotherapy- Correct

B. Billing for services

C. Diagnosing patients with mental health disorders

D. Optimizing current patient medication regimens - Correct

Background: As the number of mental health clinicians continues to decrease, there is a disproportional demand for adequate provider access. Pharmacist-driven medication therapy adjustments improve access opportunities in this population with the goal of improving quality of life and outcomes for adults with various mental health disorders. Though the use of psychiatric medications is becoming more accepted by the public, there is an indwelling lack of confidence in continued care by providers due to the disease complexity, as well as schedule limitations and the overwhelming need for increased providers in rural areas. Pharmacists are becoming a proposed solution in performing these beneficial services.

Methods: Established patients of a medically underserved FQHC enrolled in current mental health services eligible for a pharmacotherapy consult within the 6-month study period were included. The primary endpoint for the study was the change in measurable outcomes via mental health screening scores. The secondary endpoints were the potential revenue generation based on pharmacist visits overall and overall impact. Cost-savings and financial benefits were measured by revenue generated over the 6-month study period overall and the conversions of patients to the FQHC pharmacy. Impact was measured by patient satisfaction, disease improvements, adequate lab monitoring, medications reconciled, patient assistance provided through programs, and no-show rates.

Results: In progress

Conclusion: In progress

global: Y

8:50am – 9:05am C **Evaluation of VTE Prophylaxis in Trauma Patients at a Large Community Hospital** Athena B

Moderators: Allie Hale, Christele Francois

Presenters: Sarah Skaggs Gatewood

Evaluation of VTE Prophylaxis in Trauma Patients at a Large Community Hospital

Authors: Sarah Skaggs Gatewood and Jerry Robinson

Objectives:

1. Identify current recommendations for proper VTE prophylaxis in trauma patients.
2. Explain the implementation of guideline directed VTE prophylaxis management.
3. Compare VTE event rates before and after implementation.

Background/Purpose: In 2022, the American Association for the Surgery of Trauma/American College of Surgeons-Committee on Trauma published a clinical protocol with updated recommendations for inpatient venous thromboembolism (VTE) prophylaxis after trauma. The dosing of enoxaparin for VTE prophylaxis in trauma patients at Huntsville Hospital did not match these recommendations. Trauma patients are at an increased risk of VTE, including deep vein thrombosis and pulmonary embolism. Pharmacologic and mechanical VTE prophylaxes are often necessary to decrease the risk of thromboembolic events after a trauma occurs. This project seeks to explore previous institution-specific dosing based on age, renal function, and other factors, compared to updated dosing to match 2022 recommendations.

Methods: This single-center, pre-post implementation, quasi-experimental study evaluated adult patients 18 years of age or older admitted to Huntsville Hospital under the care of trauma services from January 1st, 2024, to January 31st, 2025. Data was collected from the electronic health record (EHR) and analyzed using descriptive statistics. The following pre-intervention and post-intervention data were collected: patient demographics, hospital length of stay, renal function, VTE prophylaxis dosing, lab monitoring, and risk factors. Patients were excluded if they had a length of stay less than 72 hours, did not receive any mechanical VTE prophylaxis, or if they transferred to a long-term facility. A classification of patients was made based on current VTE prophylaxis guidelines after the trauma algorithm published by the American Association for the Surgery of Trauma/American College of Surgeons-Committee on Trauma1. The primary endpoint was appropriate compliance with the 2022 algorithm for VTE prophylaxis post-trauma. Efficacy was assessed via anti-Xa monitoring, targeting a range of 0.2-0.4 units/mL, with 10 mg dosing adjustments for levels outside this range. Secondary endpoints included composite rates of deep vein thrombosis and pulmonary embolism, patient length of stay, days on VTE prophylaxis, and adverse drug events (ADEs) related to enoxaparin administration. Hospital-specific data and current policies were reviewed to identify areas of improvement, which included adherence to practice guidelines for VTE prophylaxis in trauma patients. Post-intervention data included the same metrics as listed for the pre-implementation data set. An ongoing quality review was performed in the post-intervention phase to identify potential changes and ensure compliance.

Results: A total of 160 patients (mean age, 50 years) were studied, 80 in the pre-implementation group and 80 in the post-implementation group, with similar baseline characteristics, risk scores, overall length of stay, and days on VTE prophylaxis between groups. Adherence to guidelines was noted to be overall 44% in the pre-implementation group and 84% in the post-implementation group for all patients included. No anti-Xa levels were checked in the pre-implementation phase. In the post-implementation phase, target range anti-Xa levels were achieved in 53 out of 80 patients (87%), with 43 patients (70%) having their first level within the target range. The incidence of VTE events was similar between groups but lower in the post-implementation phase, with only 9% of patients experiencing VTE events versus 13% in the pre-implementation phase.

Conclusion: The implemented order set and ongoing feedback integration lead to successful protocol implementation. Overall compliance with the 2022 published algorithm for post-trauma venous thromboembolism prophylaxis was achieved in 84% of patients. Anti-Xa monitoring post implementation occurred in 87% of patients versus zero prior to implementation. VTE events were less in the post implementation phase as well. An ongoing review will be continued to evaluate ordering options as well as opportunities to optimize monitoring and adherence.

Self-Assessment Question:

What is the primary purpose of anti-Xa monitoring in patients?

1. To assess renal function
2. To evaluate anticoagulant effect of current dosing strategy for effectiveness and safety
3. To monitor for potential allergic reactions
4. To check for the development of deep vein thrombosis (DVT)

global: Y

8:50am – 9:05am R **Effects of selective serotonin reuptake inhibitors on stress ulcer bleeding in critically ill patients** Athena G

Moderators: Tia Collier

Presenters: Morgan Keller, Morgan Keller

Evaluators: Sarah Frye

Title:

Effects of selective serotonin reuptake inhibitors on stress ulcer bleeding in critically ill patients

Authors:

Morgan Keller, Sabrina Croft, Joseph Crosby

Objective:

To be presented in slides

Self Assessement Question:

To be presented in slides

Background:

Critically ill patients in the intensive care unit have increased risk for gastrointestinal complications, including stress ulcers and bleeding due to physiological stress, mechanical ventilation, and pharmacological interventions such as anticoagulants and corticosteroids. Prophylactic treatments such as proton pump inhibitors and H2-receptor antagonists are commonly used to mitigate this risk. The aim of this study is to determine whether the use of selective serotonin reuptake inhibitors is associated with an increased incidence of gastrointestinal bleeding with critically ill patients.

Methods:

This retrospective, observational chart review evaluates adult patients who are critically ill and admitted to one of the St. Joseph's/Candler intensive care units who are taking selective serotonin reuptake inhibitor medications compared to patients with a comparator ICD 10 code (NSTEMI I21.4) not taking selective serotonin reuptake inhibitor therapy. A computer-generated list identified patients who were admitted to one of the St. Joseph's/Candler intensive care unit (ICU), coronary care unit (CCU), or neuro-intensive care unit (NICU) with selective serotonin reuptake inhibitor therapy in patient from August 1 2020-August 1 2024. Comparatively, a second computer-generated list identified patients who were admitted to one of the St. Joseph's/Candler ICU, CCU, or NICU with ICD 10 code I21.4 from August 1 2020-August 1 2024. Subjects were then be reviewed for study inclusion or exclusion based on the aforementioned criteria, and Microsoft office excel was used to randomize patients and select 50 patients per treatment arm. Chart review was conducted to determine if the patient was diagnosed with a gastrointestinal bleed during their specific visit. All data was collected and analyzed through Microsoft office excel. Primary outcomes and input variables are summarized with means and standard deviations for continuous measures, and proportions and percentages for non-continuous measures. Any adjusted analysis conducted was through multivariable regression.

Results:

Among the 100 critically ill patients admitted to the ICU, CCU, or NICU unit at St. Joseph's and Candler Hospital, nine (9%) of patients were found to have a gastrointestinal bleed. Of the 9 patients who had a gastrointestinal bleed, seven (77.8%) of the patients were not on selective serotonin reuptake inhibitor therapy (SSRI) whereas 2 (22.2%) were on SSRI therapy. Among the nine patients diagnosed with a gastrointestinal bleed, five patients were in the CCU, one patient in the NICU, one patient in the St. Joseph's ICU, and two patients in the Candler

ICU. 71 (71%) of patients were on stress ulcer prophylaxis with either proton pump inhibitors or histamine type-2 receptor antagonists and only one of these patients experienced a gastrointestinal bleed.
The primary endpoint analysis demonstrated no statistically significant association between SSRI therapy and increased risk of gastrointestinal bleeding in critically ill patients admitted into intensive care units, (p-value of 0.08). The lack of statistical significance suggests other clinical factors may contribute to the numerically fewer patients who experienced gastrointestinal bleeding on selective serotonin reuptake inhibitor medications than those patients not on selective serotonin reuptake inhibitor therapy.

Conclusion:
Selective serotonin reuptake inhibitor therapy does not appear to significantly increase the risk of gastrointestinal bleeding in critically ill patients admitted to intensive care units. Despite the predisposing factors of these patients to gastrointestinal complications, the observed incidence of bleeding was not higher in patients receiving selective serotonin reuptake inhibitors compared to those not receiving selective serotonin reuptake inhibitors who were diagnosed with NSTEMI. Considering the study's limitations of retrospective design and small sample size, further research with larger, multicenter data should explore the potential relationship of selective serotonin reuptake inhibitors and gastrointestinal bleeding risk in critically ill patients.

global: Y

8:50am – 9:05am R **Evaluation of Desmopressin in Preventing Overcorrection of Hyponatremia Among Patients with Renal Dysfunction** Athena H

Moderators: Rebecca Orr
Presenters: Kelsea Mabie
Evaluators: Martin Gordon

Title: Evaluation of Desmopressin in Preventing Overcorrection of Hyponatremia Among Patients with Renal Dysfunction

Authors: Kelsea Mabie, Tara Kennell, Rajarshi Patel, Brooke Smith, Aaron Chase, Kelli Henry

Background: Hyponatremia is a common cause for hospital and intensive care unit (ICU) admission. Treatment strategies vary based on patient presentation and the presumed cause of hyponatremia, but center around sodium repletion, fluid balance management, and discontinuation of offending agents. Increasing serum sodium must be done in a slow, controlled fashion to prevent overcorrection which may cause adverse neurological effects, including osmotic demyelination syndrome (ODS). One method to prevent sodium overcorrection includes administering desmopressin to decrease free water loss via the kidneys, avoiding hemoconcentration and rapid increase in sodium. Studies have demonstrated desmopressin is a useful agent for this indication; however, there is limited evidence on the efficacy of desmopressin in the setting of renal dysfunction.

Methods: This was a single center, retrospective cohort study at an academic medical center that received exemption from the institutional review board. Adult patients with a serum sodium <125 mEq/L who received one or more doses of intravenous (IV) desmopressin during their admission were included. Patients were excluded if they received desmopressin for a diagnosis of diabetes insipidus or hemorrhage. The primary outcome was the difference in rate of sodium overcorrection (>8 mEq/L) 24 hours after the first desmopressin dose in patients with renal dysfunction compared to those without renal dysfunction. Renal dysfunction was defined as creatinine clearance less than 30 mL/min. Secondary outcomes included rate of correction before and after desmopressin, proportion of patients achieving a sodium correction of 5–10 mEq/L within 24 hours of presentation, and rate of overcorrection at 24 and 48 hours after presentation. Outcomes were assessed with chi-squared, t-test, and Mann-Whitney U as appropriate. All patient demographics were categorized using mean and standard deviation or median and interquartile range.

Results: Sixty-five patients were included in this study with 14 patients (21.5%) having renal dysfunction. Forty-three (66.2%) patients were male, 54 (83.1%) were admitted to the ICU, and 17 (26.2%) received a home medication associated with hyponatremia. Baseline variables including age, sex, ICU admission, renal function, baseline sodium, weight, and fluid status were well-balanced between groups. Patients in the renal dysfunction group received significantly more milliequivalents of sodium through IV fluids compared to those without renal dysfunction (90.7 vs 284.2 mEq, p=0.001), which was primarily driven by 0.9% sodium chloride administration. There was no difference in the primary outcome of rate of overcorrection 24 hours after administration of desmopressin (9.8 vs 21.4%, p=0.476). The mean change in sodium 24 hours after desmopressin was similar between groups (2.43 vs 3 mEq/L, p=0.691), with no difference in rate of overcorrection at 24 hours (9.8 vs 28.6%, p=0.173) or 48 hours (5.9 vs 14.3%, p=0.632) after admission. Correction within goal range was similar between groups at 24 hours after admission (51.0 vs 50.0%, p=1.000) and after desmopressin administration (17.6 vs 28.6%, p=0.597). There were no differences in safety outcomes.

Conclusion: Our study did not demonstrate a difference in overcorrection of sodium after desmopressin in those with impaired versus normal renal function. Overall, there was a low incidence of overcorrection, though this study was likely underpowered. The results did not reach statistical significance however, the observed

differences in sodium overcorrection rates could suggest that renal dysfunction may not influence the clinical response to desmopressin. Future studies are warranted to determine the effect of renal dysfunction on safety and efficacy of desmopressin.

global: Y

8:50am – 9:05am R **Tolerability of Enteral Nutrition in ICU Patients Receiving Vasopressors** Athena I

Moderators: Charleen Melton, PharmD, BCCCP
Presenters: Micah McKinnie
Evaluators: Brittny Medenwald

Title: Tolerability of Enteral Nutrition in ICU Patients Receiving Vasopressors

Authors: Micah A. McKinnie, Megan Langley, Jana Mills

Background/Purpose: Critically ill patients are often faced with malnutrition and are thought to require more high-protein and calorie-dense diets. Due to favorable mortality outcomes, implementation of enteral nutrition within 24-48 hours of ICU admission is recommended for critically ill patients who cannot receive an oral diet. However, studies have shown that patients in the ICU are unlikely to receive the amount of nutrition they were initially prescribed. One contributing factor is the practice of delaying or pausing enteral nutrition for patients on high or increasing doses of vasopressors due to the risk of serious complications, such as ischemic or necrotic bowel. The lack of strong evidence has led to an ongoing debate about whether patients requiring ongoing vasopressors should receive enteral nutrition. As more evidence regarding the safety of initiating early enteral nutrition in patients on vasopressors emerges, there is potential for a professional consensus to be made. This may allow for a greater portion of the nutritional needs to be met in these critically ill patients. This retrospective single-center chart-review study seeks to explore further if patients receiving vasopressors exhibit a decreased tolerance to enteral feedings, resulting in an inability to achieve adequate nutrition.

Methods: A retrospective review was conducted to identify patients admitted to the ICU from January 2024 through August 2024. Patients included in the study were at least 18 years old, on mechanical ventilation for at least 24 hours, admitted to the ICU for greater than 72 hours, and had a consult for enteral nutrition during their ICU stay. Patients were excluded if they were on vasopressors for less than 24 hours, were placed on end-of-life care, underwent GI surgery, or had other contraindications to enteral nutrition. Patients were subdivided into either the treatment group (vasopressors for at least 24 hours) or the control group (no vasopressors) to compare the primary outcome of the average percent of daily caloric goals met. Secondary outcomes included the average daily rate of vasopressors, the median time patients received enteral nutrition, the median time of interruption, and incidences of suspected intolerance to enteral feeding. Data was collected for the total course of the prescribed enteral feeding while in the ICU, or until vasopressors were discontinued (if applicable).

Results: The average percent of caloric goals met while in the ICU was 46.7% for the vasopressor group and 56.9% for the control group. The vasopressor group was found to have both a lower median time receiving enteral nutrition (3 days vs 5 days, p-value 0.002) and a lower median time of enteral nutrition interruption (26 hours vs 45 hours, p-value 0.003). Incidences of suspected intolerance occurred in 28.2% of the vasopressor group and 7.7% of the control group. The median vasopressor rate during the study period was 0.072mcg/kg/min norepinephrine equivalents, and the median vasopressor rate at the time of suspected intolerance was 0.158mcg/kg/min norepinephrine equivalents.

Conclusions: Mechanically ventilated patients requiring vasopressors in the ICU tended to receive a lower percentage of caloric goals through enteral nutrition than those not requiring vasopressors. Regardless of vasopressor use, this patient population was generally underfed while in the ICU. However, the clinical significance of these findings needs further exploration, and prospective research may be beneficial.

global: Y

8:50am – 9:05am | **LVADing the Way: Narrowing Antibiotics Without Increasing Infection Risk** Athena A

Moderators: Joseph Kohn
Presenters: Shyam Patel
Evaluators: Melissa Padgett

Title:
LVADing the Way: Narrowing Antibiotics Without Increasing Infection Risk

Authors:
Shyam Patel; Dusty Lisi; Mahmoud Abdou

Objectives:
To evaluate the impact of different antimicrobial prophylaxis in patients undergoing LVAD implantation on infection free survival.

Background:
Driveline infections are one of the most serious and common complications associated with left ventricular assist device (LVAD) implantation. With an increase in prevalence of LVADs being used as a bridge to heart transplant or as destination therapy in end-stage heart failure, there is growing concern about optimizing perioperative antimicrobial management in LVAD procedures to prevent driveline infections and LVAD-associated infection (LVADI). Current guidelines for surgical infection prophylaxis (SIP) for LVAD implantation are not well established, leading to varied SIP regimens including single and multi-drug regimens covering the common pathogens such as Staphylococcus aureus, Staphylococcus epidermidis, Klebsiella pneumoniae, and Enterobacter species. Institutions may also opt to cover for rare fungal and Pseudomonas infection based on institution-specific pathogen prevalence and antimicrobial resistances.

Broad spectrum antimicrobials have been the regimen of choice for LVAD SIP; however, the overuse of antimicrobials has led to several undesirable outcomes such as antimicrobial resistance and increased healthcare costs with questionable effects on patient outcomes. Several recent studies have found that narrow LVAD SIP regimens did not impact the infection-free survival or all-cause mortality as compared to different multi-drug regimens.

On August 13th, 2023, Emory Healthcare changed its SIP for LVAD implantations. This updated protocol replaced the previous regimen containing micafungin, vancomycin, and cefepime/levofloxacin with one that contains vancomycin and cefuroxime. The goal of this study is to evaluate the effectiveness of this new narrower drug regimen without pseudomonas and fungal coverage and its outcome on infection-free survival and mortality in LVAD patients at our institution compared to the previous multi-drug broad spectrum SIP.

Methods:
A multi-center, retrospective chart review IRB-approved study was conducted to analyze patients meeting inclusion criteria pre- and post-implementation of a standardized LVAD SIP protocol (August 13th, 2023). Included patients who were at least 18 years of age and had received either a HeartMate 2, HeartMate 3, or HeartWare device at Emory Saint Joseph's Hospital or Emory University Hospital. Patients were excluded if they did not have antimicrobial prophylaxis documented at the time of LVAD surgery, were receiving antimicrobial therapy 2 weeks prior to LVAD implantation for a previously diagnosed infection or had with concerns for infection prior to procedure. The primary outcome was time-to-infection. Secondary outcomes included percent driveline infection within 1st year, time-to-mortality, infection type, and organism type.

Results (pre-protocol vs post-protocol implementation):

Ultimately, 62 patients were included in the pre-protocol implementation group and 18 patients in the post-protocol implementation group. Baseline demographics were similar between the two groups with the exception of a lower BMI in the pre-protocol group (27.6 vs.29.8 kg/m², p=0.04) and a higher percentage of individuals requiring pre-operative mechanical support in the pre-protocol group (65% vs 39%, p=0.01).There were a greater percentage of documented LVADI in the pre-protocol group (37% vs 33%); however, this was not correlated to a decreased time to infection between the pre-protocol and post protocol groups (267 vs 454 days, p=0.76). Both groups had similar percentage of mortality (15% vs 17%) with no difference in time to mortality (1847 vs 423 days, p=0.85).

Conclusions:

Following the implementation of a protocol to narrow LVAD SIP by replacing the previous regimen containing micafungin, vancomycin, and cefepime/levofloxacin with one that contains vancomycin and cefuroxime for LVAD surgeries, there was no change to time to LVADI or mortality. Despite the small sample sizes and the differences in their sizes, this antimicrobial stewardship strategy was successful in reducing improper antimicrobial use across out healthcare system without compromising patient outcomes.

global: Y

8:50am – 9:05am F **Implementing a Pharmacy Clinical Decision Support Council for a 54 Hospital health-system.** Athena J

Presenters: Sabrina Desmond

Evaluators: Azur Eckley, Brandon Sucher

Title: Implementing a Pharmacy Clinical Decision Support Council for a 54Hospital health-system.

Authors: Sabrina Desmond, Pharm.D.; Fei Wang, Pharm.D.; Craig MacDonald, Pharm.D.

Objective: To describe the creation and maintence of a clinical decision support oversight group to manage alerts within a multi-state health system.

Self Assessment Question: True or False: The only purpose of a clinical decision support council is to eliminate as many alerts as possible to reduce alert fatigue.

Background: Pharmacy-driven clinical decision support (CDS) is a critical element for optimizing medication safety and therapeutic outcomes in inpatient hospital systems. Pharmacy teams often manage an extensive array of drug-related alerts that can range from formulary and dosing recommendations to drug interactions and therapeutic duplications. Without focused oversight, these alerts can become overwhelming and lead to alert fatigue which could compromise the quality of patient care. A pharmacy-specific CDS Council can address these challenges by standardizing alert strategies, prioritizing clinically relevant notifications, and driving evidence-based enhancements to medication-related workflows.

Methods: Constructing an advisory group to oversee drug-related alerts required several steps:

- Establishing a workflow for alert review submissions
- Creating specialized workgroups that could provide insight for alert reviews
- Construct a voting structure that allows for diverse assessment and input

Items are entered into the CDS review process by inputting a request into a ticket management platform. After submission, items are reviewed by a workgroup comprised of electronic health record (EHR) analysts and pharmacy informatics experts to evaluate the request and propose solutions for consideration. Following that initial review, solutions are discussed and voted on independently by a medication safety workgroup and a clinical workgroup. Each of these workgroups have at least one representative from each of the eight regions within the hospital system. Finally, solutions and voting results are presented to a final council that includes leaders in clinical, medication safety, EHR, and informatics specialties. All results are discussed, and final actions are determined.

To evaluate the interventions made by this CDS council, requests have been categorized into 4 groups: alert deactivation, alert activation, creation of a custom alert, and no action taken. A secondary analysis was performed to better understand the reasons for taking no action. Therefore, the group "no action taken" was further subcategorized into one of the following: alert is appropriate, alert is not indicated, functionality not available, or exists in current state.

Results: A total of 59 items were tracked from August 1st, 2024 - March 31, 2025.The number of items reviewed were categorized into the 4 groups as follows:

- Alert deactivation: 4 items
- Alert activation: 11 items
- Creation of custom alert: 12 items
- No action taken: 32 items

Since there were 32 items that were categorized as "no action taken," these items were further subcategorized

as follows:

- Alert is appropriate: 18items
- Alert is not indicated: 5 items
- Functionality not available: 5 items
- Exists in current state: 4 items

Conclusion: A structured workflow is needed in order to perform a systematic review and comprehensive assessment for CDS enhancements within a health system. By gathering insight from diverse specialties and system-wide representatives, balanced adjustments can be made to alert settings. These adjustments potentially lead to management of alert fatigue and other limitations experienced with CDS tools. Further investigation is needed to assess the overall impact that is made when adjusting alert settings. Additionally, further optimization and expansion of the CDS Council process can allow for proactive investigation of potential alert adjustments as well as an assessment of other CDS components beyond alert settings.

global: Y

8:50am – 9:05am L **Major Risk Factors Associated with the Development of Candidemia in Intensive Care Units at University Hospital in Mobile, AL** Parthenon 2

Presenters: Kennadi Johnson

Evaluators: Jason Dover

Title: Major Risk Factors Associated with the Development of Candidemia in Intensive Care Units at University Hospital in Mobile, AL

Authors: Kennadi Johnson, Ashley Hawthorne, Callie Seales

Background: Data on candidemia in the United States are limited. The Centers for Disease Control and Prevention (CDC) reports that approximately 25,000 cases of candidemia occur annually with a mortality rate of 25%. Due to its opportunistic nature, candidemia is primarily seen in critically ill and immunocompromised patients. Common risk factors include immunosuppression, current *Candida* colonization, central venous catheter placement, recent abdominal surgery, and broad-spectrum antibiotic use, to name a few. The "*Candida* score" was developed in 2009 and may be utilized as a predictor of invasive *Candida* infection; however, it has numerous limitations. The Infectious Diseases Society of America (IDSA) 2016 Clinical Practice Guideline for Management of Candidiasis recommends initiating empiric antifungal therapy in select critically ill, non-neutropenic patients.

Methods: In this retrospective, single-site study, patients were identified via a report in the medical record to capture all patients ≥ 18 years of age in the Intensive Care Units (ICU) with *Candida* in ≥ 1 blood culture(s). Patients not admitted to the ICU or with neutropenia were excluded. The following data was collected: age, gender, race, date and ward of admission, length of stay, collection date of first positive *Candida* blood culture, vital signs and labs at ICU admission and within 72-hours of positive *Candida* blood culture, past medical history, time of intubation and extubation, in-hospital mortality, and empiric antifungal therapy. Pre-disposing factors including pacemaker or defibrillator placement, any mode of dialysis, central venous catheter (CVC), foley catheter, total parental nutrition (TPN) use, home medications, history of intravenous (IV) drug use, presence of multifocal *Candida* colonization, and recent abdominal surgery were also collected. The primary objective of this study is to identify risk factors associated with the development of candidemia in ICU at our institution. The secondary objectives are to evaluate the performance of the "*Candida* score", in-hospital mortality, incidence of candidemia by ICU location, and frequency of empiric antifungal therapy. Descriptive statistics were utilized to describe the results, and the "*Candida* score" was calculated for each patient.

Results: Between October 1, 2018, and July 1, 2024, thirty-five patients met the inclusion criteria. The pre-disposing factors occurring in ≥ 50% of the study population were CVC (n=32, 19%), foley catheter (n=30, 86%), mechanical ventilation (n=29, 83%), and severe sepsis (n=20, 57%). *Candida* albicans was the most common species isolated (n=15, 43%). The percentages of patients admitted to the medical intensive care unit (MICU), surgical-trauma intensive care unit (STICU), and neuroscience intensive care unit (NSICU) were 49% (n=17), 46% (n=16), and 6% (n=2), respectively. In-hospital mortality occurred 63% (n=22) of the sample. The "*Candida* score" was only positive for 40% (n=14) of the sample, and 46% (n=16) of patients received empiric antifungal treatment.

Conclusion: In this analysis, CVCs, foley catheters, severe sepsis, and mechanical ventilation were the most common characteristics amongst patients who developed candidemia. Lastly, the "*Candida* score" failed to accurately predict the likelihood of developing in candidemia in non-neutropenic, critically ill patients at University Hospital in Mobile, AL.

global: Y

8:50am – 9:05am L **Outcomes Associated with Formal Infectious Diseases Consultation for Positive Blood Cultures with Staphylococci Other Than Staphylococcus aureus** Parthenon 1

Moderators: Margaret Williamson
Presenters: Kellee B. Geren
Evaluators: Emily Johnson

Title: Outcomes Associated with Formal Infectious Diseases Consultation for Positive Blood Cultures with Staphylococci Other Than *Staphylococcus aureus*

Authors: Kellee B. Geren, Brandon Hawkins, Mary Joyce Wingler, Jessica Ortwine, Samantha Walker, Helen Ding, Bryan Walker, Cami Andreini

Objective: This study attempted to determine the impact of infectious diseases consultation on the clinical management, readmission, and mortality of patients with *Staphylococcus lugdunensis, Staphylococcus pseudintermedius*, or *Staphylococcus schleiferi* isolated from a blood culture.

Self Assessment Question: True or False: Infectious diseases consultation in patients with *S. lugdunensis, S. pseudintermedius*, or *S. schleiferi* bacteremia resulted in a significant decrease in mortality or 30-day readmission.

Background: There is data suggesting infections caused by *S. lugdunensis, S. pseudintermedius*, and *S. schleiferi* may be associated with a higher acuity of illness. However, there is limited data defining the management of these organisms when isolated from a blood culture, as well as the impact of infectious disease consultation on mortality in these patients.

Methods: This was a multi-center, observational, retrospective cohort study that compared the clinical management and disease course of patients with (consult group) and without an infectious diseases consultation (no consult group). Adult patients admitted between January 1, 2014 and March 1, 2024, with blood cultures positive for one of the specified organisms were included. Patients were excluded if *S. aureus* was isolated at any point during admission or if they discharged, died, or transitioned to hospice prior to blood culture speciation.

Results: The primary outcome composite of 90-day all-cause mortality from index blood culture or 30-day readmission due to bloodstream infections caused by *S. lugdunensis, S. pseudintermedius,* or *S. schleiferi* was 17.9% in the no consult group and 12.2% in the consult group ($p = 0.308$). Hospital length of stay was a median of 6.82 days in the no consult group compared to a median of 11.69 days in the consult group ($p < 0.001$). Thirty-day mortality was 12.8% in the no consult group versus 8.5% in the consult group versus ($p = 0.379$).

Conclusion: In patients who received an infectious diseases consult, 90-day mortality, 30-day mortality, and 30-day readmission were numerically, but not significantly, lower. A larger study is needed to assess the impact of infectious diseases consultation on mortality for specific staphylococci.

global: Y

8:50am – 9:05am

O **Randomized, Blinded Study of Olanzapine 2.5mg versus 5mg in Quadruplet Prophylaxis of Nausea/Vomiting after High-Dose Melphalan for Autologous Transplantation (The FONDO-LOW Trial)** Olympia 2

Moderators: Kristen Kilby

Presenters: Hanh Tran

Title: Randomized, Blinded Study of Olanzapine 2.5mg versus 5mg in Quadruplet Prophylaxis of Nausea/Vomiting after High-Dose Melphalan for Autologous Transplantation (The FONDO-LOW Trial)

Authors: Hanh Tran, E. Behren Ketchum, Vamsi Kota, Amber Clemmons

Objective: This study aims to determine the optimal dose of olanzapine when added to triplet prophylaxis in preventing CINV while minimizing the risk of daytime sedation after high-dose melphalan for patients with multiple myeloma receiving auto-HCT.

Self Assessment Question: In the FONDO-LOW study, subjects were assessed for emesis episodes, nausea severity, and sedation severity over five consecutive days. Each day, they rated their nausea and sedation severity using a 4-point scale based on their experiences in the past 24 hours. (True)

Background: Chemotherapy-induced nausea and vomiting (CINV) is a common and difficult to manage side effect. Olanzapine is an FDA-approved atypical antipsychotic that blocks multiple neuronal receptors involved in nausea/vomiting pathways. The FOND-O trial conducted at our institution by Clemmons and colleagues previously determined that adding olanzapine 10 mg to triplet prophylaxis (fosaprepitant, ondansetron, dexamethasone) improved CINV for patients undergoing high-dose chemotherapy for autologous stem cell transplantation (auto-HCT). Results from that trial led to the American Society of Clinical Oncology (ASCO) and National Comprehensive Cancer Network (NCCN) guidelines offering the olanzapine-based quadruplet regimen as an option for this population. Despite the high efficacy, several studies have shown that the 10 mg olanzapine dose may be associated with substantial daytime somnolence. Current NCCN guidelines recommend low-dose olanzapine of 5 mg or 2.5 mg if 10 mg or 5 mg, respectively, causes excessive sedation. Additionally, many transplant centers endorse utilizing lower doses to avoid the sedating effect of olanzapine. Despite the use of lower doses in practice, no publications have evaluated an optimal dose of olanzapine in reducing CINV and minimizing daytime sedation when added to standard triplet therapy for patients receiving high-dose melphalan for auto-HCT.

Methods: This is a single-center, prospective, randomized, double-blind study. Inclusion criteria are adult patients 18 years and older who receive high-dose melphalan 140-200 mg/m2 prior to auto-HCT. Patients will be randomized to receive encapsulated olanzapine 5 mg or 2.5 mg tablet orally on the day of high-dose melphalan and for three additional days post-chemotherapy in addition to standard triplet antiemetic prophylaxis consisting of an NK-1 receptor antagonist, ondansetron, and dexamethasone. Primary endpoint is percentage of patients achieving overall CINV complete response (CR), defined as no emesis and no more than mild nausea on 0-4 scale (0-none, 1-mild, 2-moderate, 3-severe), between the two olanzapine dosing groups. Secondary endpoints are complete protection (CR plus no breakthrough antiemetic use), total number of emetic episodes and breakthrough antiemetic doses, rate of study drug discontinuation, and incidence of no more than mild daytime sedation per patient report on the 4-point scale (none to severe). All outcomes will be reported in acute (chemotherapy day), delayed (four days after chemotherapy), and overall 5-day assessment periods. With an 80% power alpha of 0.05, 86 patients recruited for each arm to detect a 10% difference between groups. Hence, a total of 172 patients will be accrued for 3 years. Descriptive statistics are utilized to analyze patient demographics whereas Chi-square and t-test are used for primary and secondary outcomes.

Results: In Progress

Conclusion: In Progress

global: Y

9:10am – 9:25am | A | **Med-to-Bed Program Expansion to Transplant Services** | Olympia 1

Presenters: Amelia Hornaday
Evaluators: Stephanie Ring, Abbi Rowe
Title: Med-to-Bed Program Expansion to Transplant Services

Authors: Amelia Hornaday, Alyson Ghizzoni-Burns, Heather Kundert, Alexandra Pyatt, Danielle Eskens

Objective: To expand the med-to-bed program to transplant services.

Background: Prisma Health has an established Kidney Transplant Program. It is vital to provide patients with strong continuity of care to support them through life post-transplant. Med-to-Bed programs were developed to decrease readmissions, improve medication adherence, reduce barriers to medication access, improve patient experience, and increase discharge prescription capture. Greenville Memorial Hospital's med-to-bed program is offered to nearly all inpatient units through Upstate Medical Pharmacy, an internal outpatient pharmacy. Discharge prescriptions for transplant patients are currently being filled and mailed to the hospital by a third-party pharmacy. Given the increasing number of transplants and desire to expand services offered, it is imperative to the patient and organization to develop a process to include solid organ and bone marrow transplant services within the med-to-bed program.

Methods: Current and proposed processes were evaluated and compared to outside institutions to determine best practices. A Medicare Part B billing contract was established at Upstate Medical Pharmacy and test claims were billed for various insurance types. A workgroup was established consisting of both pharmacy and transplant staff to operationalize the workflow. Prior to go-live, education will be provided to transplant nursing and providers, inpatient pharmacy staff, and the outpatient med-to-bed team. Upon program expansion go-live, respective units will be auto-enrolled for med-to-bed in the electronic health record at the point of patient admission. The primary outcome is revenue generation and continued prescription capture rate.

Results: In progress

Conclusion: In progress

global: Y

9:10am – 9:25am B **Evaluating the Impact of "On the Spot"– a Remote Pharmacy Hypertension Consult Service** Athena D

Moderators: Katrina White, PharmD, BCACP
Presenters: Briana Bethune, Briana Bethune
Evaluators: Cori Edmonds

Title:

Evaluating the Impact of "On the Spot"– a Remote Pharmacy Hypertension Consult Service

Authors:

Briana Bethune; Jamie Coates; Naomi Yates

Background:

Nearly half of adults in the United States have hypertension, although only 22.5% are considered controlled. Studies have shown that pharmacist intervention can improve management of hypertension through scheduled pharmacy appointments. However, no studies appear to examine pharmacist impact on blood pressure during nurse visit appointments where clinical pharmacy is not physically present. The purpose of this study was to determine whether immediate remote blood pressure consultation by clinical pharmacy specialists reduces time to blood pressure goal in patients diagnosed with hypertension.

Methods:

This IRB-exempt, observational, retrospective cohort study was conducted within an integrated healthcare delivery system. This study included adult patients diagnosed with hypertension who had a blood pressure reading between 140-179/90-109 mmHg after repeat check at a nurse visit from November 2023 to August 2024. Patients were excluded from the study if they were pregnant, receiving hospice/palliative care, or had a GFR < 30 mL/min/1.73 m2. Patients in the treatment group received an immediate consultation from a remote, on-call pharmacist for medication review and optimization as needed. Patients in the control group received usual care where the "Doctor of the Day" was consulted for recommendation(s) as their schedule permitted. The primary outcome of this study was to assess time to blood pressure goal (defined as ≤ 140/90 mmHg) for patients managed by the "On the Spot" pharmacy hypertension consult service compared to patients who received usual care. The secondary objectives were to evaluate medication optimization, change in blood pressure from baseline, and the percentage of patients who achieved blood pressure goal compared to usual care. The tertiary objective was to compare the percentage of patients enrolled in remote blood pressure monitoring (RBPM) where "On the Spot" was utilized versus usual care. Results were assessed at 4 months post intervention and data was analyzed using descriptive statistics.

Results:

The study included 1,726 participants with 1466 patients in the control group and 260 patients in the intervention group. The average time to achieve blood pressure control was 31.93 ± 27.43 days in the control group and 31.21 ± 25.85 days in the intervention group, showing no statistically significant difference (p=0.72). Patients that received medication changes on the day of the nurse visit at a higher rate in the intervention group (62.31%) compared with the control group (35.54%, p<0.0001). The percentage of patients who achieved the blood pressure goal of ≤ 140/90 mmHg was similar between both groups with 87.08% in the control group and 88.21% in the intervention group (p= 0.51). Similarly, changes in systolic and diastolic blood pressure from baseline were comparable in the control and intervention groups (systolic: -24.91 vs. -23.06 mmHg, p = 0.13; diastolic: -8.27 vs. -9.76 mmHg, p = 0.09, respectively). The percentage of patients enrolled in RBPM was significantly higher in the intervention group at 63.08% versus 6.55% in the control group (p<.0001).

Conclusion:

The "On the Spot" remote pharmacy hypertension consult service demonstrated a significant impact on process measures, including higher rates of medication optimization and enrollment in RBPM compared to usual care. While the time to blood pressure control and overall blood pressure control rates were similar between groups, the higher medication intervention rates and RBPM enrollment suggest that integrating remote pharmacist consults into nurse visits enhances hypertension management workflow efficiency. Benefits include reducing delays in care, clearing physician and nurse schedules, and increasing rate of follow up. These findings highlight the value of immediate remote pharmacist intervention and underscore the potential for integrated remote pharmacy services to enhance hypertension management in healthcare systems.

global: Y

9:10am – 9:25am B **Evaluation of the Impact of a Pharmacist-led Smoking Cessation Clinic Within a Primary Care Setting** Athena C

Moderators: Devki Gajera
Presenters: Tiffany Gilchrist
Evaluators: Erin Himes

Title: Evaluation of the Impact of a Pharmacist-led Smoking Cessation Clinic Within a Primary Care Setting

Authors: Tiffany Gilchrist, Victoria McCarthy, Zil Tyler, Regan Wilson

Objective: To evaluate the effectiveness of a pharmacist-led smoking cessation clinic over a three-year period at the Piedmont Athens Regional Clay Community Care Clinic (CCCC)

Background: Smoking cessation plays a critical role in disease prevention and can significantly improve patient health outcomes. Pharmacists can be a great resource to assist individuals with smoking cessation due to their extensive background in pharmacotherapy and easy accessibility. This retrospective study aimed to evaluate the effectiveness of a pharmacist-led smoking cessation clinic over a three-year period at the Piedmont Athens Regional Clay Community Care Clinic (CCCC). This study hypothesized that patients who establish care with a pharmacist will demonstrate higher quit rates compared to patients who do not establish care with a pharmacist.

Methodology: This was a single-center, retrospective chart review of adult patients with a history of cigarette smoking referred to the CCCC pharmacist-led smoking cessation clinic from July 1, 2021 to June 30, 2024. Patients interested in smoking cessation are referred to the pharmacist-led smoking cessation clinic by their primary care provider. However, some patients do not establish care despite pharmacist outreach efforts. The primary outcome of this study is the percentage of patients who successfully quit smoking. Secondary outcomes include the percentage of patients who relapsed after quitting and the percentage of patients who successfully quit after previous unsuccessful quit attempts. Pre-specified subgroup analyses were evaluated for patients who established care with a pharmacist which included time to quit, percentage of patients who adhered to pharmacotherapy if prescribed, percentage reduction of cigarettes smoked from baseline, the percentage of patients who quit after receiving medication and behavioral counseling vs percentage of patients who quit with behavioral counseling alone, and the total number of follow-up visits completed with a pharmacist in patients who quit. Data collected included current cigarette usage at each encounter, pack-year history, pharmacological agents if prescribed, number of follow-up visits, reason for discharge, previous quit attempts, and if patients relapsed after quitting. Continuous data was analyzed using the Mann-Whitney U test and presented as an interquartile range (IQR) or medians. Categorical data was analyzed using the Chi-Square test and presented as percentages or numbers. Statistical significance was met for the primary and secondary outcomes of the study if the $p < 0.05$.

Results: A total of 171 eligible patient referrals were reviewed, with 150 patients meeting the inclusion criteria. Baseline characteristics were similar between groups, with an average age of 53.5 years and 51.5% male patients. Among the 75 patients who did not establish care with a pharmacist, 67 (89%) did not receive smoking cessation pharmacotherapy. In the intervention group, the most commonly utilized pharmacotherapy was nicotine replacement therapy, prescribed in 54.6% of cases. The primary outcome—patients who quit smoking—was achieved in 14.7% of patients managed through the pharmacist-led smoking cessation clinic, compared to 1.3% of patients who did not establish care ($p = 0.003$). For secondary endpoints, there was a significant difference in patients who quit smoking after previous unsuccessful quit attempts (13.3% vs. 0%, $p = 0.02$). No significant difference in patients who relapsed after quitting was found between both groups (5.3% vs. 0%, $p = 0.46$).

Conclusions: In conclusion, patients who established care with a pharmacist had a statistically significant improvement in successful smoking cessation.

global: Y

9:10am – 9:25am C **IMPACT OF A MULTIDISCIPLINARY TEAM IN THE MANAGEMENT OF SUBJECTS WITH HEART FAILURE** Athena B

Moderators: Allie Hale, Christele Francois

Presenters: Nicole DeLalla

IMPACT OF A MULTIDISCIPLINARY TEAM IN THE MANAGEMENT OF SUBJECTS WITH HEART FAILURE

Nicole DeLalla, Athena Colon, Richard Lane, Reginald Leandre, Tracey Dobbs
AdventHealth Apopka – AdventHealth Apopka, Florida, FL

Background: In 2024, nearly seven million individuals in the United States were diagnosed with heart failure.1,2 The resulting healthcare-related expenditure for treatment of this disease state has been calculated at over $3 million.1,2 In order to improve clinical outcomes, studies have shown that guideline-directed medical therapy (GDMT) can increase survival rates by 6.3 years. Additionally, GDMT has the potential to alleviate financial burden as a single heart failure-related hospitalization can cost about $15,000. 3,4 A study by Fallon and colleagues found that taking an interdisciplinary approach to heart failure management resulted in a 6% decrease in 30-day recurrent admissions in this patient population.5 However, there are limited studies focusing on how inpatient interventions affect rehospitalizations.

Methods: This was a single-center, retrospective chart review conducted at AdventHealth Apopka between July 1st, 2024 to December 31st, 2024. Included subjects were 18 years of age or older with a diagnosis of heart failure with reduced ejection fraction (HFrEF), defined as ejection fraction (EF) less than 40%. The exclusion criteria were subjects with an EF of 40% or greater, a history of a heart transplant, or planned heart transplant at the time of index visit. The primary objective was to assess the impact of a multidisciplinary heart failure management team on 30-day readmission rates. Secondary objectives included 30-day cardiovascular-related readmission, 30-day all-cause mortality, dose optimization defined as dose titration of GDMT medications or addition of at least one GDMT medication drug class, and inpatient length of stay (LOS). In addition, safety outcomes evaluated were incidence of acute kidney injury (AKI), hypotension, bradycardia, and hyperkalemia.

Results: A total of 904 subjects were reviewed. Among those patients 146 subjects were included while 758 subjects were excluded. Baseline characteristics showed mainly white/Caucasian males with an average age was 67 years old. The 30-day readmission rates among the included patients were 33%. The 30-day cardiovascular readmission rate was 14%, and the 30-day all-cause mortality rate was 7%. Beta blockers had the highest incidence of dose titration at 17 %. The highest incidence of GDMT initiation was both beta blocks and diuretics with 27%. The average LOS was about 4.92 days.

Conclusion: In conclusion, this study saw a readmission rate of 33% after a multidisciplinary heart failure management team. When compared to national readmission rate of 25%, there is an eight percent difference in readmission rates to this study.6 This would suggest that there are areas of opportunities to further development of this heart management team.

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global: Y

9:10am – 9:25am R **Dexamethasone versus dexamethasone and fludrocortisone in patients with septic shock and acute respiratory distress syndrome** Athena I

Moderators: Charleen Melton, PharmD, BCCCP
Presenters: Gabrielle Cromley
Evaluators: Brittny Medenwald

Title: Dexamethasone versus dexamethasone and fludrocortisone in patients with septic shock and acute respiratory distress syndrome

Authors: Gabrielle Cromley, PharmD; Audrey Johnson, PharmD, BCCCP; Eric K. Shaw PhD; Stephanie Lesslie, PharmD, BCPS, BCCCP

Objective: The purpose of this study was to compare duration of vasopressors within 30 days in patients with septic shock and ARDS who received either dexamethasone or dexamethasone and fludrocortisone.

Self Assessment Question: By what mechanism does mineralocorticoid activity improve septic shock?

Background:
Corticosteroids are recommended for both septic shock and moderate to severe acute respiratory distress syndrome (ARDS). Hydrocortisone is recommended in septic shock requiring vasopressors and it has both glucocorticoid and mineralocorticoid effects. Its mineralocorticoid effect provides additional benefit in septic shock by increasing fluid retention and peripheral vascular resistance. Dexamethasone is recommended for ARDS given the findings of the DEXA-ARDS trial which showed decreased duration of mechanical ventilation and all-cause mortality. Dexamethasone exhibits pure glucocorticoid activity and does not have mineralocorticoid activity. For patients with septic shock and ARDS, the ideal corticosteroid regimen is not clearly defined. The addition of fludrocortisone to dexamethasone may be beneficial in these patients given its mineralocorticoid effects. The purpose of this study is to determine if the addition of fludrocortisone to dexamethasone reduces vasopressor duration in patients with septic shock and ARDS.

Methodology:
This single-center, retrospective cohort study was conducted at a 711-bed academic medical center. All data was collected from electronic medical records (EMR) by individual chart review. EMR reports of dexamethasone and fludrocortisone administrations between May 2020 through September 2024 were generated. Mechanically ventilated adult patients were included if they met all of the following criteria: PaO2:FiO2 < 200; receiving antibiotic therapy; requiring vasopressor support ≥ 10 mcg/min norepinephrine equivalent; administration of dexamethasone for ARDS with or without fludrocortisone for ≥ 48 hours. Patients were excluded if they met any of the following criteria: cardiogenic shock, chronic corticosteroid use, brain death, pregnant, or incarcerated. Patients who received concomitant fludrocortisone and dexamethasone were excluded if fludrocortisone was initiated > 5 days after starting dexamethasone. The primary outcome was the duration of vasopressors within 30 days. Secondary outcomes included all-cause mortality, ICU mortality, duration of mechanical ventilation in ICU survivors, ICU length of stay, and cumulative norepinephrine equivalent (NEE) dose, and fluid balance.

Results:
Twenty-nine patients were included in the dexamethasone only group and 15 patients were included in the dexamethasone/fludrocortisone group. Median duration of vasopressors within 30 days was 5 days (IQR 3.5 – 13) in dexamethasone/fludrocortisone group and 5 days (IQR 3 – 10) in the dexamethasone only group (p = 0.81). All-cause mortality was similar with 10 (66.%7) in the dexamethasone/fludrocortisone group and 18 (62.1%) in the dexamethasone only group (p = 0.76). ICU mortality was also similar with 9 (60%) in the dexamethasone/fludrocortisone group and 18 (62.1%) in the dexamethasone only group (p = 0.89). Median ICU

length of stay was 11 days (IQR 8.5 – 26.5) for dexamethasone/fludrocortisone versus 12 days (IQR 8 – 21) in the dexamethasone only group (p = 0.84). Median duration of mechanical ventilation was 5 days (IQR 4 – 8) in the dexamethasone/fludrocortisone group compared to 7 days (IQR 6 – 12) in the dexamethasone only group (p = 1.0). The dexamethasone/fludrocortisone group required a median of 55,684 mcg NEE (IQR 36,132 – 86,663) cumulatively compared to 41,651 mcg NEE (IQR 13,686 – 62,784) with dexamethasone only (p = 1.0). Median difference in fluid balance after corticosteroids was +1.9 L (IQR -2.8 – 6.5) in the dexamethasone/fludrocortisone group and +0.54 L (IQR -2.6 – 4.9) in the dexamethasone only group (p = 1.0).

Conclusion:
Patients with septic shock and ARDS had similar duration of vasopressors within 30 days whether they received dexamethasone/fludrocortisone or dexamethasone alone. There were no differences in all-cause mortality, ICU mortality, or ICU length of stay between groups. Patients who received dexamethasone/fludrocortisone had numerically shorter duration of mechanical ventilation and more positive fluid balance but these findings were not statistically significant. This study was underpowered and limited by its small sample size. Larger randomized controlled trials are needed to investigate the effects of fludrocortisone and dexamethasone in patients with ARDS and septic shock.

Resident contact: garbrielle.cromley@hcahealthcare.com

global: Y

9:10am – 9:25am R **Optimizing Outpatient Antibiotic Therapy: Impact of Continuous Infusion Beta-Lactams and Vancomycin on Patient Adherence and Clinical Outcomes** Athena G

Moderators: Tia Collier
Presenters: Tarik Prince
Evaluators: Sarah Frye

Title: Optimizing Outpatient Antibiotic Therapy: Impact of Continuous Infusion Beta-Lactams and Vancomycin on Patient Adherence and Clinical Outcomes

Authors: Tarik Prince, Tyler Martin, Geren Thomas, Megan Mills

Objective: To compare the impact of continuous infusion (CI) versus intermittent infusion of beta-lactams and vancomycin in outpatient parenteral antibiotic therapy (OPAT) on patient adherence, clinical outcomes, and device-related complications, while assessing potential advantages of CI based on pharmacokinetic/pharmacodynamic principles.

Self-Assessment Question: How does continuous infusion (CI) of beta-lactams and vancomycin in OPAT compare to intermittent infusion in terms of patient adherence, clinical outcomes, and device-related complications? Provide at least one potential advantage of CI based on pharmacokinetic/pharmacodynamic principles.

Background: Beta-lactam antibiotics are widely used globally, and their bactericidal activity depends on optimizing pharmacokinetics by maximizing the fraction of time their concentration exceeds the minimum inhibitory concentration (fT>MIC). Continuous infusion (CI) over 24 hours has been demonstrated to improve fT>MIC, potentially leading to enhanced bacterial eradication, reduced resistance development, and lower relapse rates compared to intermittent infusion. While robust data exist for inpatient settings—showing reduced mortality, shorter hospital stays and improved clinical cure rates—the impact of CI in outpatient parenteral antibiotic therapy (OPAT) remains underexplored, especially concerning patient adherence and clinical outcomes. This study investigates CI versus intermittent infusion of beta-lactams and vancomycin in OPAT, focusing on treatment success, adherence rates, and device-related complications such as catheter occlusions and infections.
Methods: This prospective, quasi-experimental study evaluated patients discharged on CI antibiotics versus intermittent dosing. Inclusion criteria included adults (≥18 years) receiving OPAT with beta-lactam antibiotics for infections requiring prolonged therapy. Stability data for beta-lactams and vancomycin administered via CI through elastomeric devices were reviewed for compatibility with 24-hour CI. A dosing protocol was developed, detailing drug preparation, concentrations, device use, and patient monitoring. Patient adherence was assessed through self-reports (documenting missed doses), shipment tracking (confirming on-time medication delivery), and provider follow-ups (verifying compliance with administration schedules). Adherence was defined as 100% of prescribed doses received without missed or delayed doses. Secondary outcomes include clinical response, adverse effects, and hospital readmission rates within 30 days post-treatment completion. Data will be analyzed descriptively, with logistic regression for adherence predictors.
Results: An interim analysis was conducted, including six patients in the intermittent infusion group. The mean age was 71 years (range 51–90 years), with 67% of patients being male. The infections treated included osteomyelitis, urinary tract infection, *Methicillin-Sensitive Staphylococcus aureus* (MSSA) bacteremia, pneumonia, MSSA wound infection, and *Pseudomonas aeruginosa* wound infection. Adherence rates were 67%, with four patients adhering to therapy. Clinical response was achieved in 66% of patients, with no readmissions within 30 days post-discharge. Despite non-adherence in two patients, both achieved clinical cure. The most notable adverse event was a rash, which prompted a change in therapy.
Conclusion: No definitive conclusions can be drawn at this time due to the small sample size and data available only for one arm of the study. Given the limited sample size, further research with a larger cohort is needed to explore factors influencing adherence and its potential impact on clinical outcomes. Data collection is ongoing for both the intermittent infusion and continuous infusion groups, and additional retrospective data may be required

to strengthen these findings.

global: Y

9:10am – 9:25am | **Doxycycline Versus Azithromycin for Chlamydia Treatment in the Emergency Department** Athena A

Moderators: Joseph Kohn
Presenters: Paakhee Shah, Paakhee Shah
Evaluators: Melissa Padgett

Title: Doxycycline Versus Azithromycin for Chlamydia Treatment in the Emergency Department

Authors: Paakhee Shah, Dora Hall, Sarah Cullen

Background/Purpose:
Chlamydia is a sexually transmitted infection with a high rate of incidence, and most commonly affects those 24 years old and younger. It can often present asymptomatically, so it is important to test and treat patients routinely. Untreated chlamydia infection can cause complications such as pelvic inflammatory disease, ectopic pregnancy, and infertility. Before the 2021 Sexually Transmitted Infections (STI) Treatment Guidelines were released by the Centers for Disease Control and Prevention (CDC), the treatment of choice for chlamydia infection was a one-time oral dose of azithromycin 1 gram. With its continued use, Chlamydia trachomatis has developed resistance to azithromycin, especially in patients with rectal infection. The 2021 CDC STI Treatment Guideline recommends using doxycycline 100 mg orally twice daily for 7 days, which is highly efficacious in urogenital, rectal, and oropharyngeal infections. Azithromycin should still be used as an alternative in pregnant patients, in patients where nonadherence is a high concern, or patients with an allergy to doxycycline.
A previous evaluation of prescribing according to the CDC Guidelines at Emory Decatur Hospital (EDH) and Emory Hillandale Hospital (EHH) showed that 66% of patients received doxycycline and azithromycin double coverage inappropriately. As a result of the evaluation, an order panel was developed to prompt providers to prescribe doxycycline over azithromycin, unless indicated otherwise. This study's purpose was to determine if the increased use of doxycycline reduces treatment failure incidence and contributes to better patient outcomes.

Methods:
This single-center, retrospective cohort study aimed to evaluate the impact of the updated CDC guidelines and hospital order panel on re-infection rates and treatment failure. Outcomes compared two cohorts: cohort one included 224 patients who were treated for Chlamydia infection in the emergency department with only doxycycline and cohort two included 40 patients who were treated for Chlamydia infection in the emergency department with only azithromycin. The primary outcome was treatment failure or re-infection rates, defined as having a subsequent positive NAAT test three to four weeks after initial diagnosis. Secondary outcomes included order panel and CDC guideline adherence and prescribing patterns of doxycycline versus azithromycin.

Results:
The incidence of treatment failure in the doxycyline group was 0.9% (n=2) and 5% in the azithromycin group (n=2) (OR 5.8, 95% CI [0.8-42.7], p-value 0.11) with a power of 0.3. For secondary endpoint of appropriate antibiotic use following the placement of the order panel, 88.3% of patients received the appropriate antibiotic selection, 9.1% of patients received azithromycin inappropriately, and 2.7% of patients had a treatment duration of longer than 7 days. Of the 173 patients that were screened to determine the secondary endpoint incidence of double coverage following placement of the order panel, 1.7% of patients received double coverage (n=3).

Conclusion:
The study was not adequately powered to identify a statistically significant difference in re-infection or treatment failure between doxycycline and azithromycin, but more patients who received azithromycin experienced re-infection/treatment failure compared to doxycycline. Antibiotic selection for treatment of Chlamydia infection should continue to be based on 2021 CDC STI Guideline recommendations with doxycycline as the agent of choice. Creation of the order panel was beneficial in minimizing double coverage and allowed for better treatment administration.

global: Y

9:10am – 9:25am L **Apixaban Safety and Efficacy for the Treatment of Venous Thromboembolism in Patients on Dialysis** Parthenon 2

Presenters: Luren Ashton Dickinson

Evaluators: Jason Dover

APIXABAN SAFETY AND EFFICACY FOR THE TREATMENT OF VENOUS THROMBOEMBOLISM IN PATIENTS ON DIALYSIS

L. Ashton Dickinson, TJ Hodge, Robert Moye, Kimberly Keller, Abby Cowan, Taylor Bird, Ross M. Nesbit
University of Tennessee Medical Center – Knoxville, TN

Background/Purpose: While there is data in favor of using apixaban for the treatment of acute venous thromboembolism (VTE) in patients with End Stage Renal Disease (ESRD), more data is needed to inform safe and efficacious dosing in this population. This study evaluated the safety and efficacy outcomes of various apixaban dosing strategies for acute VTE in adult hospitalized patients with ESRD on dialysis.

Methodology: This was a single-center, retrospective analysis that drew data from dialysis patients who experienced an acute VTE between the period of January 2016 and December 2023. Groups compared included patients who received apixaban 10 mg BID for 7 days (full lead-in dosing) with 5 mg BID thereafter to patients who received apixaban 10 mg BID for 0-6 days (modified lead-in dosing) with 5 mg BID thereafter. Patients ≥ 18 years with ESRD on maintenance dialysis (hemodialysis or peritoneal) and a newly diagnosed acute VTE receiving anticoagulation therapy with apixaban were included in this study. Primary endpoints collected comprised of&n

global: Y

9:10am – 9:25am L **Description of Clinical Pharmacist Interventions on an Acute Care Unit** Parthenon 1

Moderators: Margaret Williamson
Presenters: Jamarius Carvin
Evaluators: Emily Johnson

Title: Description of Clinical Pharmacist Interventions on an Acute Care Unit

Authors: Jamarius Carvin, Kelley Frances Henley, Niaima Geresu, Irene Bemis, Kristina Evans, Stella Ye

Objective: Evaluate the impact of a dedicated clinical pharmacist on acute care unit interventions

Self-assessment: How did a dedicated pharmacist affect daily interventions?

Background: In a clinical setting, pharmacists optimize medication therapy and enhance patient safety. Studies have shown pharmacists identify and prevent errors with potential cost avoidance. Quantifying their impact is crucial for justifying clinical pharmacy services, especially concerning medication errors at hospital discharge, which pose risks and increase costs. Pharmacist-led medication reconciliation at discharge (PMRD) has shown positive impacts on reducing medication errors, preventing adverse drug events and improving patient safety. Pharmacists also provide drug information, optimize therapy, and improve cost-effectiveness. It is important to continue to evaluate the impact of a clinical pharmacist in an evolving healthcare field, so this research investigates the impact of implementing a dedicated clinical pharmacist on an acute care unit by quantifying interventions.

Methods: This retrospective chart review was conducted at Grady Health System (GHS). The study compared two periods on a 40-bed acute care unit: a baseline period (20 weekdays in April 2024) with usual GHS pharmacy protocol and an intervention period (20 weekdays from May-June 2024) with a dedicated pharmacy resident. The primary outcome was the average number of pharmacist interventions per day. Secondary outcomes included intervention categorization, the number of patients with interventions, the total number of interventions, and high-risk medication interventions. Exclusion criteria were duplicate documented interventions. Descriptive statistics and chi-squared testing were used for analysis.

Results: The average number of interventions per day increased from 5.7 (± 2.6) in the control period to 16.85 (± 7.8) in the intervention period. The total number of documented interventions in the control period was 99 compared to 337 in the intervention period. The number of patients with at least one documented pharmacist intervention increased from 61 to 175

global: Y

9:10am – 9:25am

O **Paclitaxel infusion reaction evaluation and prevention strategies at a large community hospital outpatient chemotherapy infusion center** Olympia 2

Moderators: Kristen Kilby

Presenters: Emma Pride

Title: Paclitaxel infusion reaction evaluation and prevention strategies at a large community hospital outpatient chemotherapy infusion center

Authors: Emma Pride1; Allison Bass1; Amanda Ouzts1; Melissa Strobel2; F. Joseph Kelly2
Pharmacy Department, Huntsville Hospital – Huntsville, Alabama1
Tennessee Valley Gynecologic Oncology – Huntsville, Alabama2

Purpose/Background: Paclitaxel, a widely used drug in the treatment of gynecologic malignancies, is associated with hypersensitivity reactions in an estimated 2-4% of patients, and infusion related reactions in around 27% of patients, despite pre-medications. There are known risk factors for paclitaxel reactions including respiratory dysfunction, obesity (defined as a body mass index ≥ 25), no history of alcohol consumption, and postmenopausal status. Recent updates to the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) provide new insights into managing infusion-related reactions and hypersensitivity reactions in this setting, yet practical applications remain limited for management and prevention. Utilizing this information and other literature, this study aimed to evaluate the incidence of paclitaxel reactions at a large outpatient infusion center and implement a process improvement initiative focused on optimizing infusion protocols and premedication timing to enhance patient safety and support continued use of first-line therapy.

Methodology: This single-center, IRB-approved, pre-post implementation study evaluated female patients aged ≥18 years with gynecologic malignancies who received 3-hour paclitaxel infusions at Huntsville Hospital's outpatient infusion center. The pre-intervention group included 224 patients who received paclitaxel from February 1, 2022, to December 31, 2024. Data collected from the electronical medical record included demographic factors, known reaction risk factors, and premedication timing. A new paclitaxel titration protocol and modified premedication timing strategy were implemented starting February 3, 2025 through April 1, 2025. Post-intervention data included patients receiving paclitaxel beginning on that date, regardless of treatment cycle. The primary endpoint was the occurrence of any documented reaction to paclitaxel.

Results: A total of 224 patients were included in the pre-implementation analysis, of whom 44 (19.6%) experienced a reaction to paclitaxel. Of these, 11 (25%) were classified as hypersensitivity reactions, 28 (63.6%) as infusion-related reactions, and 5 (11.4%) could not be clearly classified. Common risk factors identified included BMI ≥ 25 (n=156), with 23% of these patients experiencing a reaction. Additionally, 84% of patients who reacted had premedications administered ≥45 minutes before paclitaxel. Following the implementation of updated premedication timing and infusion titration protocols, no reactions were documented in the initial 43 post-implementation administrations across cycle 1, cycle 2, and subsequent cycles.

Conclusion: Implementation of an updated paclitaxel infusion protocol—including more prompt administration of premedications, priming lines with paclitaxel rather than normal saline, and a modified titration schedule—was associated with a reduction in infusion-related and hypersensitivity reactions. While initial post-intervention data is promising, continued monitoring is warranted to confirm the long-term impact in a larger cohort.

global: Y

9:10am – 9:25am | 1 | **Comparative Outcomes of Post-Transplant Cyclophosphamide (PTCy) vs Non-PTCy-Based GVHD Prophylaxis Regimens in Allogeneic Hematopoietic Stem Cell Transplantation** | Athena J

Presenters: Gyunash Akibova
Evaluators: Azur Eckley, Brandon Sucher

Title: Comparative Outcomes of Post-Transplant Cyclophosphamide (PTCy) vs Non-PTCy-Based GVHD Prophylaxis Regimens in Allogeneic Hematopoietic Stem Cell Transplantation

Authors: Gyunash Akibova, Kristen Kilby, Henry Kent Holland, Justin LaPorte, Eva Karam

Objective: This study aims to evaluate the long-term outcomes of PTCy-based GVHD prophylaxis in alloHSCT recipients over a 10-year period at Northside Hospital. The primary objective is to assess chronic GVHD-free relapse-free survival (CGFRFS) in patients receiving PTCy compared to those who did not. Secondary objectives include evaluating overall survival (OS), relapse-free survival (RFS), NRM, and the incidence of acute and chronic GVHD.

Background: Graft-versus-host disease (GVHD) is a significant complication following allogeneic hematopoietic stem cell transplantation (alloHSCT), particularly in patients with human leukocyte antigen (HLA)-mismatched or haploidentical donors. Traditional GVHD prophylaxis regimens, such as a calcineurin inhibitor (CI) and methotrexate (MTX), have been effective but are still associated with risks of acute and chronic GVHD, as well as non-relapse mortality (NRM). Post-transplant cyclophosphamide (PTCy) alone or in combination with a CI with or without mycophenolate has emerged as a promising approach for GVHD prophylaxis, showing favorable results in reducing GVHD incidence in alloHSCT recipients. A recent retrospective study at The Blood and Marrow Transplant Program at Northside Hospital suggested the benefits of PTCy beyond haploidentical transplants, prompting further investigation into its long-term outcomes.

Methods: This single-center, retrospective chart review will include patients who underwent alloHSCT at Northside Hospital between January 1, 2013, and December 31, 2023. Recipient health records will be identified using a proprietary database to identify patients who received an alloHSCT during the study period. Data will be extracted from electronic health records (Cerner Powerchart®, OncoEMR®) and hospital databases. Patients will be excluded if they are receiving a second alloHSCT. Key data points include patient demographics, HLA disparity, use of PTCy, GVHD incidence, time to GVHD onset, disease relapse, and survival outcomes.

Results: In Progress

Conclusion: In Progress

global: Y

9:30am – 9:45am | **Empty** | Athena J

Evaluators: Azur Eckley, Brandon Sucher

9:30am – 9:45am B **Evaluation of a Pharmacist-Led Cardiovascular-Kidney-Metabolic (CKM) Initiative** Athena C

Moderators: Devki Gajera
Presenters: Jennie Reese
Evaluators: Erin Himes

Title: Evaluation of a Pharmacist-Led Cardiovascular-Kidney-Metabolic (CKM) Initiative

Objective: To evaluate the impact of a pharmacist-led cardiovascular-kidney-metabolic (CKM) initiative to assist in early detection in management of CKD to slow disease progression and prevent cardiovascular disease.

Background: In 2023, the American Heart Association (AHA) published a presidential advisory on Cardiovascular- Kidney-Metabolic (CKM) Health, which defines CKM syndrome as a health disorder attributable to connections among obesity, diabetes, chronic kidney disease (CKD), and cardiovascular disease (CVD), including heart failure, atrial fibrillation, coronary heart disease, stroke, and peripheral artery disease. The AHA recommends that patients be screened across their life span with the main aim to reduce the risk of CKD progression and prevent associated cardiovascular outcomes. This wholistic approach includes patient-centered pharmacologic and nonpharmacologic therapy which may include treatment of obesity, diabetes, hypertension, hyperlipidemia, and CKD to reduce cardiovascular disease risk factors. In order to slow progression and prevent associated adverse outcomes of CKM, it requires an interdisciplinary team of nephrology, cardiology, endocrinology, and primary care. However, there are barriers to this wholistic approach which include provider difficulty managing risk factors, provider concerns about adverse drug reactions , patient acceptance, affordability of treatment, and lack of comprehensive integrated clinical information systems. The inclusion of a clinical pharmacist in this multidisciplinary team can help address these barriers to increase the number of patients on guideline-directed therapy with the ultimate goal to reduce CKD and CVD risk in CKM. Pharmacists at our institution have implemented a CKM initiative to assist in early detection in management of CKD to slow disease progression and prevent cardiovascular disease.

Methods: A single-center retrospective chart review was conducted at Piedmont Columbus Regional Midtown Family Medicine Center and Piedmont Community Health Clinic to evaluate the impact of the pharmacist-led CKM initiative conducted between October 1, 2024, through February 28, 2025. The study included patients screened by clinical pharmacists at Piedmont Columbus Community Health and Piedmont Columbus Family Medicine and excluded patients on renal replacement therapies and renal transplant patients. The primary outcome was the percent of patients receiving CKM screening with an actionable recommendation by the pharmacist [obtainment of a laboratory assessment, addition of guideline directed therapy, adjustment in guideline directed therapy doses, or referral to the pharmacist managed clinic for chronic disease state management (DM, HTN, HLD, CKD, obesity management, smoking cessation)]. Secondary outcomes included percent of patients on guideline-recommended therapies for CKM pre- and post-intervention, percent of patients diagnosed with CKD through screenings, percent of patients with a positive clinical outcome, and number of medications obtained through patient assistance programs. Descriptive statistics were used to analyze the primary objective and both chi-square and descriptive statistics were used to analyze the secondary outcomes.

Results: In progress

Conclusion: In progress

global: Y

9:30am – 9:45am B **Tripping on Serotonin and Norepinephrine Reuptake Inhibitors: Evaluating the Fall Risk in Older Adults using Claims Data** Athena D

Moderators: Katrina White, PharmD, BCACP
Presenters: Lakedra White
Evaluators: Cori Edmonds

Title: Tripping on Serotonin and Norepinephrine Reuptake Inhibitors: Evaluating the Fall Risk in Older Adults using Claims Data

Authors: Lakedra White, Chelsea Keedy, Kristen Pierce, Jianing Xu, Jinae Lee, Hanna Kim, Daniel Hall, Ashlee Greene, Jessica Osborn, Joshua Caballero

Background: Major depressive disorder is a common mental health issue in older adults, often treated with antidepressants. However, their use can increase the risk of falls and fractures which can significantly contribute to morbidity and mortality in this population. Most research has focused on selective serotonin reuptake inhibitors, despite the widespread use of serotonin and norepinephrine reuptake inhibitors in older adults. Overall, limited data exist on the comparative fall risk among serotonin and norepinephrine reuptake inhibitors. As a result, this study aims to assess differences in fall risk associated with serotonin and norepinephrine reuptake inhibitors in an older population.

Methods: A retrospective cohort study was completed using the MarketScan® Medicare Supplemental claims from 2015 to 2021. The study included adults aged 65 and older with a prescription claim for a serotonin and norepinephrine reuptake inhibitor (i.e., duloxetine, venlafaxine, desvenlafaxine, milnacipran, and levomilnacipran). Individuals were followed for 30 days after their prescription claim to identify falls, defined using International Classification of Diseases, 9th Revision codes E8800- E8889 and International Classification of Diseases, 10th Revision codes W00-W19 and V00141. The primary outcome was the percentage of patients who experienced a fall within 30 days of the medication claim. Descriptive statistics were used for analysis. A larger study will similarly compare fall risk and related injury in older adults newly started on these agents. The date of their first prescription claim will be defined as the index date. Individuals will be excluded if they are prescribed serotonin and norepinephrine reuptake inhibitors or selective serotonin reuptake inhibitors within the preceding two months. Individuals will also be excluded if they have a history of fall or related injury within the preceding six months.

Results: There were 194,821 individuals with a prescription claim for a serotonin and norepinephrine reuptake inhibitor from 2015 to 2021. The average age was 72.5 (+/-8.1) years and 70% were female. Within 30 days of the prescription claim, 2,171 (1.1%) patients experienced a fall. The serotonin and norepinephrine reuptake inhibitor approximate prescribing rate included duloxetine (65%), venlafaxine (30%), desvenlafaxine (4%), milnacipran (0.8%), and levomilnacipran (0.4%). The serotonin and norepinephrine reuptake inhibitor fall rate included duloxetine (1.22%), venlafaxine (0.96%), milnacipran (0.76%), desvenlafaxine (0.70%), and levomilnacipran (0.54%).

Conclusion: Preliminary findings suggest a fall rate of approximately 1% within the first 30 days for most serotonin and norepinephrine reuptake inhibitors. While duloxetine appears to have the highest fall rate, further comparisons between serotonin and norepinephrine reuptake inhibitors are needed to determine statistical and clinical significance. Additionally, it is unknown if specific doses may be associated with an increased risk of falls and fractures which needs to be further elucidated. These findings can assist providers in carefully selecting the safest serotonin and norepinephrine reuptake inhibitor and dose for older patients.

global: Y

9:30am – 9:45am C **Safety Outcomes of Tirofiban Weight Based Dosing Strategy in Overweight Patients** Athena B

Moderators: Allie Hale, Christele Francois

Presenters: Merrie Barnett-Brock

Title: Safety Outcomes of Tirofiban Weight Based Dosing Strategy in Overweight Patients

Authors: Merrie Barnett-Brock, Audrey Johnson, Sofiya Paciotti

Background: Tirofiban is a GIIb/GIIIa receptor antagonist therapy used for the treatment of myocardial revascularization in non-ST elevation myocardial infarction (NSTEMI) and ST elevation myocardial infarction (STEMI). Tirofiban dosing is weight based utilizing actual body weight. There is a hole in the literature regarding studies with information regarding safety outcomes in patients >85kg, including obese patients. Specifically, the previous literature lacks any information regarding safety outcomes in obese patients. Current studies show incidence of bleeding ranging from 0.4% to 5%. This is a major gap in the literature that this study hopes to resolve.

Methods: This IRB-approved, retrospective, single-center cohort study included patients from a 711-bed academic medical center in Savannah, Georgia. Adult patients treated with tirofiban for cardiac conditions at Memorial Health University Medical Center between January 1, 2015 and September 27, 2024 were utilized as the cohort. Other inclusion criteria included receipt of tirofiban ≥1 hour and patients dosed on actual body weight with renal dose adjustment using a creatinine clearance calculation with actual body weight. Patients were excluded if they were a protected population or if the patients were discharged <48 hours from when infusion started. The aim of this study was to assess the safety outcomes of patients with a weight ≥85 kg with a primary outcome of major bleeding defined by the ISTH criteria and secondary outcomes of minor bleeding, mortality, and rescue agents utilized. These outcomes were further assessed amongst subgroups based on BMI, renal function, and weight. The BMI subgroups included 3 categories, category one being BMI <30 kg/ m2, category two being BMI 30-40 kg/m2, and category three being BMI >40 kg/m2. The weight subgroups included three categories, category one being 85-119.9 kg, category two being 120-149.9 kg, and category three being ≥150 kg.

Results: Of the 304 patients screened, 47 were included in the final analysis. The majority of patients were white males and no patients were found to have renal dysfunction. The median weight observed in the patient population was 98 kg and the median BMI was 30.7 kg/m2. We observed a 29.7% incidence of major of bleeding. For the subgroups defined by BMI, major bleeding was found to be 44.4% in the category 1 patients, 17.3% in the category 2 patients, and 33.3% in the category 3 patients. Major bleeding occurred specifically in the weight subgroups with 30.9% of the category 1 patients, 25% of the category 2 patients, and 0% in category 3 patients. Secondary outcomes in the overall cohort included mortality in 2.1% of the population, minor bleeding in 12.7%, and 2.1% of the patients utilized a rescue agent.

Conclusions: This retrospective study provides descriptive information regarding major bleeding occurrences in patients weighing ≥85 kg where both BMI and weight subgroups were observed. We observed 29.7% of the patient population experienced major bleeding. These findings demonstrate that further research with adequately powered studies are needed to show the incidence of major bleeding amongst higher weight patients receiving tirofiban.

Disclosures: "This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities."

Best contact point for follow up of interested participants: merrie.barnettbrock@hcahealthcare.com

global: Y

9:30am – 9:45am R **Efficacy and Safety of Reduced-dose Insulin for the Treatment of Hyperkalemia in the Emergency Department** Athena G

Moderators: Tia Collier

Presenters: Blake Henderson

Evaluators: Sarah Frye

Title:

Efficacy and Safety of Reduced-dose Insulin for the Treatment of Hyperkalemia in the Emergency Department

Authors:

Blake Henderson, PharmD; Cortney Storey, PharmD, MBA; Cassey Starnes, PharmD, BCPS; Kevin Sullivan, PharmD, BCCCP; Elsa Hendrick, 2026 PharmD candidate; Jessie Lipstreuer, PharmD, BCEMP

Objective:

The purpose of this study was to assess the efficacy and safety outcomes between patients treated with reduced-dose versus standard-dose insulin for the treatment of hyperkalemia in the emergency department

Self-Assesment Question:

What is the recommended standard IV insulin dose for the treatment of hyperkalemia in the emergency department?

Background:

Hyperkalemia is a common, potentially fatal electrolyte abnormality. Hyperkalemia occurs in 1% - 10% of hospitalized patients with up to 2% - 3% identified in the emergency department. Recent estimates have shown that hyperkalemia leads to more than 800,000 annual emergency department (ED) visits in the United States with a growing prevalence due to an aging population with associated comorbidities

Methods:

This single-center, retrospective, IRB-approved study evaluated adult patients who received intravenous (IV) insulin, either reduced dose of 5 units or standard of 10 units, for the treatment of hyperkalemia from January 1, 2020 to July 31, 2024. Exclusion criteria included patients who received IV insulin for indication other than hyperkalemia, missing repeat labs within 12 hours of insulin administration, and receipt of emergent dialysis prior to first repeat potassium. The primary outcome was median change in potassium, defined as change from baseline to first repeat potassium, then from 4-18 hours post administration of the first dose of IV insulin. Secondary efficacy outcomes included repeat IV insulin doses required for persistent hyperkalemia within 12 hours, change in blood glucose (BG) at 1, 6, and 12 hours post IV insulin, additional dextrose given within 12 hours of initial IV insulin, pathway compliance with appropriate initial insulin dose and initial appropriate dextrose given for patients with a BG < 250, and hospital length of stay. The primary safety outcomes included incidence of hypoglycemia (BG <70 mg/dL) and severe hypoglycemia (BG < 54 mg/dL). IV insulin. Data was sourced from the electronic medical record and collected using REDCap and statistical analysis was conducted using SPSS. Continuous data was assessed using Student’s t-test or Mann-Whitney U test. Categorical data was assessed using Chi-square test or Fisher’s exact test.

Results:

Forty-six patients were included in the standard dose insulin group and ninety patients were included in the reduced dose insulin group. The primary outcome, mean change in potassium, was not significantly different between both groups [95% CI: -0.296 to 0.236; p=0.83) or at 4-18 hours post IV insulin administration [95% CI: 0.429 to -7.346; p=0.43]. For secondary efficacy outcomes, there was no statistically significant difference in glucose levels at baseline [95% CI: -45.935 to 13.849; p=0.29), 6 hours [95% CI: -36.146 to 19.566; p=0.56], or at 12 hours post IV insulin administration [95% CI: -33.120 to 20.129; p=0.63]. For safety outcomes, no statistically significant difference was found in incidence of hypoglycemia (10 vs 22 patients, p = 0.52) or severe hypoglycemia (6 vs 10 patients, p = 0.91) in both groups.

Conclusions:

In this retrospective, observational study, there was no difference found in median reduction of potassium levels with standard dose IV insulin vs reduced dose IV insulin. No significant differences in secondary safety and efficacy outcomes were observed.

global: Y

9:30am – 9:45am R **Evaluation of the Efficacy and Safety of Increased Quetiapine Dosing Frequency for Treatment of Delirium and Agitation in Trauma ICU Patients** Athena I

Moderators: Charleen Melton, PharmD, BCCCP

Presenters: Nicole Johnson

Evaluators: Brittny Medenwald

Title: Evaluation of the Efficacy and Safety of Increased Quetiapine Dosing Frequency for Treatment of Delirium and Agitation in Trauma ICU Patients

Authors: Nicole Johnson, Madalyn Kirkwood Brakel

Background: Delirium is a phenomenon characterized by acute onset or fluctuating mental status. Delirium is highly prevalent among patients in intensive care
units (ICUs) and is a predictor of poor clinical outcomes. Though current guidelines do not recommend routine treatment of delirium, they acknowledge that short-term use of antipsychotics may be beneficial for patients who are agitated or in severe distress. Pre-ICU trauma is a non-modifiable risk factor for the development of delirium, yet trauma patients are often excluded from studies evaluating the management of ICU delirium. Quetiapine has a favorable pharmacokinetic profile
for the management of delirium given its rapid onset of action, high bioavailability, and a relatively short half-life, however literature evaluating the effect of
dosing frequency is limited. This study aims to evaluate the efficacy and safety of increased quetiapine dosing frequency (every 6 – 8 hours) compared to historical dosing regimens for the management of ICU delirium and agitation in trauma ICU patients

Methods: This study is a retrospective, single-center chart review evaluating patients admitted to Our Lady of the Lake Regional Medical Center (OLOLRMC) between August 2020 and August 2024. An epic-generated report identified patients admitted to the trauma service who received quetiapine in an ICU. From this list, a subgroup of eligible adult patients who received at least 48 hours of quetiapine therapy after documented ICU delirium, based on Confusion Assessment Method for ICU (CAM-ICU) score, were identified. Patients were excluded based on pre-specified exclusion criteria. The primary endpoint of this study is percentage of delirium free days (DFDs) following dose optimization. Secondary endpoints include the percentage of hyperactive DFDs following dose optimization, percent of Richmond Agitation-Sedation Scale (RASS) scores at goal following dose optimization, time from quetiapine initiation to ICU stepdown, time from dose optimization to ICU
stepdown, and clinically significant QTc prolongation following quetiapine initiation.

Results: Baseline characteristics were similar between groups. The median percentage of DFD was 0 and 0.33 days in the more frequent dosing and historical dosing groups respectively (p=0.026). The median percentage of hyperactive DFD was 0.65 and 0.75 days in the more frequent dosing and historical dosing groups respectively (p=0.027). Percentage of RASS at goal was similar between groups. The median time from dose optimization to ICU stepdown was 4 days in the more frequent dosing group vs 6 days in the historical dosing group (p=0.5). More frequent dosing was not associated with an increased risk of QTc prolongation.

Conclusion: More frequent dosing does not appear to reduce the percentage of DFD but may reduce time to ICU stepdown in trauma patients while maintaining safety

global: Y

9:30am – 9:45am R **Retrospective review of food bolus resolution following pharmacologic treatment in a community hospital emergency department** Athena H

Moderators: Rebecca Orr
Presenters: Abigail Hall
Evaluators: Martin Gordon

Title: Retrospective review of food bolus resolution following pharmacologic treatment in a community hospital emergency department

Authors: Abigail E. Hall; Taylor Servais; Rachel Langenderfer; Brittany NeSmith; Ryan Lally; Evan McDonald

Objective : Identify pharmacological options available for the treatment of food bolus impactions

Self Assessment Question: For food bolus impactions, EGD remains the definitive treatment, but during the interim period which medications are available for treatment? (answers: Glucagon; Nitroglycerin)

Background: A food bolus is a medical emergency where food is impacted in the esophagus with a sudden onset of symptoms. The definitive treatment for food bolus is esophagogastroduodenoscopy (EGD), but pharmacotherapeutic management can be utilized in the interim to attempt resolution. The American Society for Gastrointestinal Endoscopy (ASGE) guideline for management of food impactions notes administration of intravenous (IV) glucagon to induce esophageal relaxation and aid with bolus passage, but use is associated with adverse events. Although the ASGE guidelines do not discuss effectiveness of oral nitroglycerin, case reports suggest it may be useful for the management of food bolus due to its ability to cause local smooth muscle relaxation. The purpose of this study is to evaluate resolution of food bolus among patients treated with glucagon only, glucagon and nitroglycerin, and nitroglycerin only.

Methods: This is a retrospective cohort study of adult patients presenting to a St. Francis Emergency Department (ED) with a food bolus. Patients were included if they received intramuscular (IM) or IV glucagon or oral nitroglycerin. Patients were excluded if they did not have an identified food bolus or their treatment outcomes were not recorded. The primary outcome evaluated was resolution of food bolus following pharmacologic treatment. Secondary outcomes included need for hospital admission, performance of emergent EGD, and documented adverse effects. Data was collected from May 20, 2022 to November 30, 2024, retrieved from chart review via electronic medical records, and maintained confidentially.

Results: There were a total of 89 patients screened. Six of these patients were excluded based on proposed criteria. Eighty-three patients who received nitroglycerin or glucagon for the indication of food bolus within a St. Francis ED between May 20, 2022 and November 30, 2024 were included. Twenty-three (27.7%) patients had resolution with medication administration alone. Glucagon alone was administered to 43 patients, nitroglycerin alone was administered to 9 patients, and 31 patients received both nitroglycerin and glucagon. Resolution of food bolus following medication administration occurred in 15 (34.9%), 3 (33.3%), 5 (16.1%) of patients respectively. The secondary outcome of requiring emergent EGD occurred in 60 patients following medication administration, and of these patients, all achieved resolution following EGD. There were eight patients requiring hospital admission. Of the patients that required admission four patients received glucagon alone, and four patients received glucagon and nitroglycerin. However, patients that were admitted were for the purposes of receiving an EGD or requiring monitoring after EGD. None of the patients experienced adverse effects of headache, flushing, or hypotension with either agent. Emesis was documented following the administration of glucagon or nitroglycerin in 19 (20.4%) and 4 (9.1%) of patients respectively.

Conclusion: This retrospective cohort study evaluated the resolution of food bolus with the administration of nitroglycerin alone, glucagon alone, or glucagon and nitroglycerin administration. No agent was found to be superior for the resolution of food bolus. Medication administration resulted in a small portion of food bolus resolution, leading to most patients requiring EGD following medication administration. However, emesis was documented more frequently following glucagon administration than following nitroglycerin administration. With minimal occurrences of resolution following any medication administration, additional factors such as medication cost and adverse effect profile should be considered when choosing a pharmaceutical agent for the treatment of a food bolus.

global: Y

9:30am – 9:45am | **Carbapenem Stewardship: Reducing Overuse in Empiric Treatment Strategies** Athena A

Moderators: Joseph Kohn
Presenters: Reshma Patel
Evaluators: Melissa Padgett

Title: Carbapenem Stewardship: Reducing Overuse in Empiric Treatment Strategies

Authors: Reshma Patel, Kristina Nakhla, Michael Saxon, Melissa Letzin

Objective: This study aims to retrospectively evaluate carbapenem utilization across Northside Hospital's five campuses to assess adherence to current Northside Hospital defined criteria, refine prescribing practices and reduce carbapenem overutilization.

Background: Carbapenems, a broad-spectrum class of antibiotics, are often overutilized in inpatient settings. While carbapenems are effective as a primary treatment option for infections caused by extended spectrum β-lactamase (ESBL)-producing bacteria, their overuse has raised concerns about developing carbapenem-resistant organisms. Establishing and adhering to appropriate carbapenem prescribing criteria is necessary to support effective stewardship.

Methods: This multi-center, randomized, retrospective chart review included patients 18 years or older, admitted to the inpatient medical-surgical floor at Northside Hospital campuses and received more than one dose of empiric carbapenem therapy from July 2023 through July 2024. Patients who received a single carbapenem dose in the emergency department, admitted to the intensive care unit (ICU), or on bone marrow transplant (BMT) service were excluded. The primary objective was to assess the appropriateness of carbapenem therapy based on current Northside Hospital defined criteria. Secondary objectives included evaluating average days of therapy for carbapenems, average days of therapy for total antibiotics, percentage of patients with confirmed ESBL isolates, and percentage of patients with confirmed multi-drug-resistant organism (MDRO) infections.

Results: The retrospective review of 150 eligible patients indicated significant overutilization of carbapenems across all Northside Hospital campuses. The study population consisted of 57% (86/150) females and 43% (64/150) males. Only 48% (72/150) of patients met the appropriate criteria for carbapenem therapy. 52% (78/150) of patients did not meet the appropriate criteria for carbapenem therapy. The most commonly treated infections in the patients that met appropriate criteria for carbapenem prescribing were urinary tract infections (35%), intra-abdominal infections (24%), empiric coverage for sepsis (11%). The most commonly treated infections in the patients that did not meet appropriate criteria for carbapenem prescribing were urinary tract infections (36%), intra-abdominal infections (35%), and bacteremia (25%). The average duration of carbapenem therapy was 6.5 days, while the average duration for total antibiotic therapy was 7.6 days in patients with confirmed ESBL/MDRO infections. The average duration of carbapenem therapy was 5.8 days, while the average duration for total antibiotic therapy was 7.9 days in patients with no ESBL/MDRO infection or negative culture. Confirmed ESBL isolates were identified in 6% (9/150) of patients. Confirmed MDRO were identified in 5% (7/150).

Conclusion: This study highlights overutilization of carbapenem therapy across Northside Hospital campuses outside of the ICU, BMT service and single doses in the emergency department. With 48% of patients meeting appropriate criteria for its use, the findings suggest opportunities to optimize prescribing practices when initiating antimicrobial therapy. A majority of carbapenems were ordered without meeting clinical indications. Implementing standardized protocols and reinforcing antimicrobial stewardship across all campuses could enhance the appropriate use of carbapenems while reducing the risk of resistance and improving patient outcomes.

global: Y

9:30am – 9:45am L **Evaluation of Quality Measure Outcome Adherence in the Treatment of Spontaneous Bacterial Peritonitis in Patients at a Large Community Hospital** Parthenon 1

Moderators: Margaret Williamson
Presenters: Leeann Gowan
Evaluators: Emily Johnson

Title:
Evaluation of Quality Measure Outcome Adherence in the Treatment of Spontaneous Bacterial Peritonitis in Patients at a Large Community Hospital

Authors:
Leeann Gowan, Christen Freeman, Doug Carroll

Objective:
Discuss adherence to quality measure outcome set forth by the American Association for the Study of Liver Diseases (AASLD) for the treatment of spontaneous bacterial peritonitis.

Self Assessment Question:
What is the recommended albumin dose patients treated for SBP should receive within 12 hours of the ascitic fluid test result?

Background:
Spontaneous Bacterial Peritonitis (SBP) is an ascitic fluid infection with an unknown source of origin. This infection is one of many complications resulting from advanced liver cirrhosis and ascites. As recommended by the American Association for the Study of Liver Diseases (AASLD) practice guidance, a diagnostic paracentesis should be performed on all patients with suspected SBP. Management of SBP includes the use of antibiotics and albumin. Empiric IV antibiotics should be initiated in all patients with an ascites polymorphonuclear (PMN) count $\geq$250 cells/mm3.

Furthermore, patients with cirrhosis have an increased risk of worsening liver and renal function from bacterial infections. The appropriateness of treatment of SBP has not been assessed at DCH. Consequently, this is a disease state, that if quality measures are not met, can progress to high rates of mortality and worsening liver and renal function. The purpose of this study was to evaluate percentage adherence to a specific cirrhosis quality measure set forth by the Practice Committee of the AASLD, in the treatment of SBP in patients at DCH Regional Medical Center and Northport Medical Center.

Methods:
This was a retrospective chart review of patients treated for SBP at DCH Regional Medical Center (a large community 583-bed hospital) and Northport Medical Center (a 204-bed community hospital). Patients were included if they were 19 years old or older, had an ICD-10 diagnosis of cirrhosis and ascites and SBP or had an ascitic fluid PMN count $\geq$250 cells/mm3.

A list of patient encounters was generated from the electronic health record (EHR) from May 2021 to July 2024. Patients that were selected for review first, were those with an ICD-10 diagnosis code for SBP, then those with an ascitic fluid white blood cell count (WBC) count. A PMN count was calculated by multiplying the total WBC by the percentage of PMNs in the differential (neutrophils). The primary outcome measure was percentage adherence to meeting all 3 criteria of the guideline recommended quality measure outcome: hospitalized patients with ascites, with an ascitic fluid PMN count of ≥ 250 cells/mm3, should receive: empiric antibiotics and albumin 1.5 g/kg within 12 hours of the ascitic fluid test result and receive albumin 1.0 g/kg on day 3. Secondary outcomes were comparison of results for those with a GI consult, characterization of antibiotic regimen, and patient encounter mortality rate. For the statistical analysis, descriptive statistics were utilized. This study was IRB exempt.

Results:
This study included a total of 40 patients. Overall, there were zero patients that met all 3 criteria of the quality measure outcome. Twenty-eight patients met at least one criteria (70%). Patients with a GI consult overall had improved outcomes. Twelve patients were empirically treated with a 3rd generation cephalosporin (54.5%). Five patients (22.7%) were treated for 5-7 days out of the twenty-two patients only treated for SBP.

Conclusion:
This study observed many ways to improve treatment of SBP at DCH. Areas of improvement include correct albumin dosing, administration of albumin within the 12-hour range, and administration of the second dose of albumin on day 3.

global: Y

9:30am – 9:45am L **The Clinical Puzzle of Anaerobic Bacteremia: Unpacking Traits of Infections and Patients with Anaerobic Bloodstream Infections and Impact of Adequate Treatment** Parthenon 2

Presenters: Sonjala Mallory

Evaluators: Jason Dover

Title: The Clinical Puzzle of Anaerobic Bacteremia: Unpacking Traits of Infections and Patients with Anaerobic Bloodstream Infections and Impact of Adequate Treatment

Authors: Sonjala Mallory, James Holland, Tyler Martin, Geren Thomas

Background: Anaerobic bloodstream infections (BSIs) are rare but clinically significant, with mortality rates ranging from 15% to 55%. These infections are commonly associated with immunosuppression, malignancies, and surgical interventions. The most frequent causative pathogens include *Bacteroides* spp., *Clostridium* spp., and *Fusobacterium* spp., with increasing resistance complicating treatment. Distinguishing true infections from contaminants, particularly Cutibacterium spp., remains a diagnostic challenge. This study aims to characterize anaerobic BSIs, identify factors distinguishing true infections from contamination, and assess the impact of timely and appropriate antibiotic therapy on patient outcomes.

Methods: This retrospective, cross-sectional study was conducted at a teaching hospital from January 2019 to April 2024. Sixty patients with confirmed anaerobic bloodstream infections were included. Patient demographics, source of infection, and clinical severity (PITT Bacteremia Score) were collected. Microbiological data, including blood culture results, were used to determine antibiotic adequacy. Patients were divided into two groups based on whether they received adequate or inadequate antibiotic therapy. Outcomes of interest include infection resolution, length of hospital stay, and 30-day all-cause in-hospital mortality. The correlation between appropriate indication documentation and antibiotic selection was evaluated. Descriptive statistics were used to summarize characteristics, and correlations between treatment adequacy, documentation, and outcomes were explored.

Results: In-Progress

Conclusion: In-Progress

global: Y

9:30am – 9:45am

O **Evaluating Iron Sucrose Discordance Among Patients Within Cone Health Outpatient Infusion Centers** Olympia 2

Moderators: Kristen Kilby

Presenters: Jessica Robles

Title: Evaluating Iron Sucrose Discordance Among Patients Within Cone Health Outpatient Infusion Centers

Authors: Jessica Robles, Yatin Patel

Objective: Evaluate the impact of transitioning iron sucrose administration to IV push on iron sucrose discordance and infusion reactions

Self-Assessment Question: True or False: The incidence of infusion reactions with iron sucrose 200 mg is similar between administration via IV push vs IVPB infusion.

Background: Discordance is defined as an inappropriate dose or timing of administration of intravenous (IV) iron based on institutional policies. Social drivers of health, which are nonmedical factors impacting health outcomes, likely play a role in IV iron discordance. Social drivers of health can be quantified through a social vulnerability index (SVI), which is a novel composite measure encompassing variables that correspond to key social drivers of health; however, SVIs have not been studied in the evaluation of iron discordance. The dosing schedule of IV iron products also likely contributes to discordance. Older-generation IV iron products require more frequent dosing and have a higher incidence of discordance, but these products continue to have high utilization due to payor coverage and lower cost per dose. Iron sucrose, an older-generation IV iron product, is Cone Health's preferred IV iron product, therefore it is essential to continually optimize its use by the health-system. In response to the nationwide fluid shortage, Cone Health outpatient infusion centers transitioned the administration of iron sucrose 200 mg doses from an IV piggyback (IVPB) infusion to an IV push. The purpose of this study was to evaluate the impact of this transition on iron sucrose discordance.

Methods: This was an IRB-reviewed and exempt, multi-center, pre-post study which evaluated iron sucrose discordance over three-month periods in the pre- and post-intervention groups. Adults who received their prescribed course of iron sucrose within the study period at one of the ten Cone Health outpatient infusion centers were included. Patients who did not have a Federal Information Processing Standards (FIPS) code available were excluded. The primary outcome was the incidence of iron sucrose discordance. A treatment course was deemed discordant if the patient did not receive at least one gram of iron sucrose within a 14-day period. Secondary outcomes included reason for iron sucrose discordance, incidence of iron sucrose infusion reactions, and Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry (CDC/ATSDR) SVI rankings. Primary and secondary outcomes were analyzed using descriptive statistics and a multiple regression model.

Results: There were 613 treatment courses included in the pre-intervention group, while 543 treatment courses were included in the post-intervention group. Among both groups, patient demographics were not statistically different, and most treatment courses were administered at a Cone Health cancer center (82.5% in the pre-intervention group vs 79.6% in the post-intervention group). After the transition of 200 mg doses to IV push, the usage of 200 mg doses increased from 71.2% to 82.7% ($p < 0.001$), and the incidence of discordance was statistically unchanged (88.9% vs 87.7%; $p < 0.26$). The incidence of discordance due to insufficient dose decreased in the post-intervention group (68.4% vs 57.3%, $p=0.001$); however, the incidence of discordance due

to prolonged duration increased in the post-intervention group (15.4% vs 19.5%, p=0.001). The incidence of infusion reactions was not statistically different between groups (0.3% vs 0.06%, p=0.15). There was not a clear difference in SVI rankings between concordant and discordant treatment courses.

Conclusion: The transition of 200 mg iron sucrose doses to administration via IV push did not impact the incidence of discordance or infusion reactions, suggesting utility in the continued use of 200 mg push doses even after the resolution of the fluid shortage. The transition appeared to result in more patients receiving at least one gram of iron sucrose but increased the duration of the treatment course. There was no clear relationship found between SVI rankings and iron sucrose discordance.

global: Y

9:30am – 9:45am P **Impact of Patient Preference on Inpatient Analgesia** Olympia 1

Presenters: Lauren LaMoyne

Evaluators: Stephanie Ring, Abbi Rowe

IMPACT OF PATIENT PREFERENCE ON INPATIENT ANALGESIA

Lauren Alaine “Lainey” LaMoyne, MaryAnn Birch, Lisa Scott

HCA Florida West Hospital – Pensacola, FL

Background/Purpose: Non-opioid analgesics are often underutilized as part of a multimodal approach. Additionally, patients may prefer non-opioids for moderate to severe pain, but these agents are often only prescribed for mild pain. In response, several changes were implemented to policy and an analgesic order set, and provider and nursing education was provided. The purpose of this study was to see if a pain management intervention consisting of usage of a standardized order set, new policy, and education will increase the usage of non-opioids administered for pain.

Methodology: This is a single center, quasi-experimental study conducted at a 515-bed academic hospital. Adult acute care inpatients were included if they were ordered a PRN (as needed) opioid pain medication and a non-opioid (acetaminophen or ibuprofen). Patients were identified using facility surveillance software reports. Patients were excluded if they had opioid use disorder, active malignancy, requirements of greater than 60 morphine milliequivalents per day before admission, contraindication or allergy to study drug, intravenous acetaminophen administration, incomplete documentation of pain scale, use of a scheduled opioid, and/or opioid reversal prior to inpatient status. Patients were also excluded if admitted to the labor and delivery unit, the intensive care unit, or palliative care. Cohort 1 consists of patients prescribed both opioids and non-opioids (acetaminophen or ibuprofen) without utilization of the revised opioid order set. Cohort 2 includes patients prescribed medications from the revised opioid order set. The primary outcome is the number of times a non-opioid was given for analgesia. The secondary outcomes are patient-reported pain scores and the number of times a non-opioid was given for moderate to severe pain per patient preference.

Results: One hundred and six patients were included in this study. The primary outcome of number of times a non-opioid was given for analgesia per length of days was 0.71 and 1.27 for cohorts 1 and 2, respectively (p=0.0362). The number of times a non-opioid was given for moderate to severe pain per length of days analyzed was 0.03 in cohort 1 and 0.2 in cohort 2 (p=0.0263). The number of times an opioid was given for moderate to sever pain per length of days analyzed was 1.3 in cohort 1 as compared to 1.3 in cohort 2 (p=0.8630). The mean non-opioid change in pain score was 1.4 in cohort 1 and -2.3 in cohort 2 (p=0.0818). The mean opioid change in pain score was -4.0 for cohort 1 as compared to -3.8 in cohort 2 (p=0.4879).

Conclusions: There was a statistically significant increase in the number of times non-opioids were administered for analgesia and a statistically significant increase in scheduled APAP utilization. There was also a statistically significant increase in the number of times opioids were given for breakthrough pain. Opioid administrations for moderate to severe pain did not result in a statistically significant difference, and there was no statistical difference in average daily MME between cohortss. Pain Scores could not be accurately assessed due to small sample size. Future studies with a larger sample size are warranted to further investigate the implications of patient preference.

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The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.

global: Y

9:50am – 10:05am	**Empty** *Evaluators: Azur Eckley, Brandon Sucher*	Athena J

9:50am – 10:05am B **Improving Compliance with Gout Management Guidelines: Implementing a Standardized Order Menu for HLA-B*5801 Testing in Veterans Prescribed Allopurinol** Athena D

Moderators: Katrina White, PharmD, BCACP
Presenters: Roslyn Mays
Evaluators: Cori Edmonds

Title: Improving Compliance with Gout Management Guidelines: Implementing a Standardized Order Menu for HLA-B*58:01 Testing in Veterans

Authors: Roslyn Mays; Mary Kalyn Pounders

Background/Purpose:
Gout is a common and significant health issue among veterans, particularly in those with comorbid conditions like chronic kidney disease and cardiovascular disease. Allopurinol, the first-line recommended treatment for gout, carries the rare risk of a severe adverse hypersensitivity reaction, allopurinol hypersensitivity syndrome (AHS). The risk of AHS is higher in those with the HLA-B*58:01 allele, which is most prevalent in African American and Asian populations. The American College of Rheumatology (ACR) 2020 Gout Management Guidelines recommend routine genetic testing for HLA-B*58:01 in these higher-risk ethnicity groups before initiation of allopurinol. As of July 2024, preliminary data from the Atlanta VA revealed significant noncompliance with these guideline recommendations. This project aimed to improve compliance with the ACR allele testing recommendations by implementing a standardized order menu with prompts for allele testing in recommended patient groups, thus in hopes of reducing the risk of AHS in at-risk veterans.

Methods:
This was a single-site, retrospective quality improvement project designed to evaluate the impact of a standardized HLA-B*58:01 allele order menu on compliance with the ACR 2020 gout management guideline recommendations. Eligible participants included veterans aged 18 or older prescribed allopurinol for non-hematologic or oncologic indications within the timeframe both prior to and following the implementation of the order menu in July 2024. Eligible patients were identified using the VA National Quality Enhancement Research Initiative (QUERI) Gout Safety Dashboard. Patients prescribed allopurinol for conditions other than gout, such as tumor lysis syndrome, were excluded using prescriber data. Baseline data was collected on key variables such as race/ethnicity, urate-lowering therapy (ULT) status, HLA-B*5801 allele testing results, and the type of prescribing provider (primary care physician or rheumatologist). The primary endpoint was the percentage of new ULT users prescribed allopurinol who received guideline-recommended HLA-B*58:01 testing before and after introducing the standardized order menu. Statistical analysis was used to compare testing compliance rates before and after the intervention. Upon data review, the impact of the order menu on allele testing was assessed to identify specific areas needing improvement, allowing for future targeted interventions in areas of continued non-compliance.

Results:
Upon review, after the implementation of the order menu, the percentage of new ULT users with guideline recommended HLA-B*58:01 test results increased by 5.2%. The total number of patients with an HLA-B*58:01 test result increased from 3.6% to 5.1%. The percentage of African American (AA) patients tested for the allele rose by 2.2%, while Asian patients demonstrated a 3.9% increase. While these changes are encouraging with a new ULT non-compliance rate decrease from 96.7% to 91.6%, more than 90% of at-risk patients remained untested, indicating that more targeted interventions may be necessary to achieve substantial improvements.

Conclusion:
The introduction of a standardized HLA-B*58:01 allele testing order menu resulted in a modest increase in testing compliance for new ULT users. While this increase is a positive step, the continued rate of non-compliance suggests the need for further refinements in the intervention. Potential future directions for this project include enhancing provider education, incorporating automated reminders, and exploring other interventions or tools to further enhance facility compliance. Continued monitoring and refinement of this

intervention will be essential to achieving better compliance rates to the ACR 2020 gout guideline recommendations, and thus, a further reduction in risk for AHS development in at-risk veteran groups.

global: Y

9:50am – 10:05am Y **Chlamydia return rates in the ED in a community-based health system following treatment with doxycycline or azithromycin** Athena B

Moderators: Allie Hale, Christele Francois

Presenters: Witney Butler

Title:

Chlamydia return rates in the ED in a community-based health system following treatment with doxycycline or azithromycin

Authors:

Witney Butler

Devon Burhoe

Erica Merritt

Joseph Crosby

Background:

Sexually transmitted infections (STIs) are a major public health concern, with 1.6 million Chlamydia cases reported in 2022. Emergency Departments (EDs) play a key role in treatment, yet many patients still receive azithromycin despite CDC guidelines favoring doxycycline. Studies show doxycycline is more effective due to its sustained drug levels, while a single dose of azithromycin may be less effective in high bacterial loads or resistance. Comparing return rates between treatments, considering demographics and pharmacist follow-up, could inform hospital protocols. Logistic regression analysis may provide insights to optimize Chlamydia management and reduce ED return visits.

Methods:

This was a retrospective, observational cohort chart review that evaluated adult patients who tested positive and were treated for Chlamydia within a community-based health system and returned within 30 days after their initial visit. Patients were excluded if pregnant or tested negative for Chlamydia. A computer-generated list identified patients with a positive Chlamydia test from December 1, 2021, to August 31, 2024. Subjects were reviewed for study inclusion or exclusion based on the criteria. Information was gathered from the subjects' electronic health records, including the prescribed antibiotic and whether they returned to the ED within 30 days for a STI complaint. If the patient was seen multiple times within the study period, there must have been at least 6 months between visits to be counted as a new study entry in the data. Patients were evaluated based on demographic characteristics including gender, sexual orientation, age, race, co-infections, insurance type, and if there was follow up by a pharmacist with a documented note in the patient’s chart. Pharmacists only contacted the patient if the test was positive and the patient was not treated correctly for Chlamydia.

Results:

Of the 1,664 ED encounters with a positive Chlamydia test, 33 patient encounters met inclusion criteria by returning to the ED within 30 days. For comparison, a control group of 33 patients who did not return within 30 days was randomly selected. Logistic regression analysis indicated that antibiotic choice does not significantly impact 30-day return rates for patients treated for Chlamydia ($p = 0.067$). Logistic regression analysis also showed that ages 18-45 years old, male sex, and African American race were associated with higher odds of 30-day ED return, while having insurance reduced the odds by 46%. Compared to no antibiotics, doxycycline and azithromycin significantly reduced return odds by 76% and 61%, respectively. Co-infection with gonorrhea was also associated with lower return rates which reduced the odds by 44%.

Conclusion:

Antibiotic selection does not appear to significantly impact 30-day ED return rates for patients with Chlamydia, suggesting it may not be a primary factor in patient return visits. More data in a larger, prospective trial is needed

to determine if there is a true relationship between initial antibiotic choice and return visit to the ED. Further research should also explore adherence monitoring strategies or microbiological data to refine STI management protocols in community-based health systems.

Resident follow-up email:
butlerwi@sjchs.org

global: Y

9:50am – 10:05am R **Evaluation of Rapid Sequence Intubation Agent Selection on Hemodynamics in Emergency Room Patients** Athena H

Moderators: Rebecca Orr
Presenters: Jaclyn Gruver
Evaluators: Martin Gordon

Title: Evaluation of Rapid Sequence Intubation Agent Selection on Hemodynamics in Emergency Room Patients

Authors: Jaclyn Gruver, Thomas Neal, Tracey Bastian, Valerie Van Vickle

Background: Rapid sequence intubation (RSI) is the process of administering a sedative induction agent and a paralytic agent to assist endotracheal intubation. The goal of induction is to induce general anesthesia, which allows for the administration of paralytics and the facilitation of optimal intubating settings. Shock index (SI) has been used by some emergency departments as a clinical severity score. It is defined as heart rate (HR) divided by systolic blood pressure (SBP) and normally ranges from 0.5 to 0.7. An SI greater than 0.9 is linked to increased risk for decompensation and poor outcomes. The purpose of this study is to evaluate the impact of induction agent selection (etomidate, ketamine, and propofol) on peri-/post- intubation hemodynamics after RSI in Emergency Room (ER) patients.

Methods: This study was an Institutional Review Board approved, single-center, retrospective chart review evaluating patients aged 18 years and older who were intubated in the ER, received one of the induction agents for RSI (etomidate, ketamine, or propofol), and survived to hospital admission. Patients who were intubated in the ER from January 1, 2022 to August 31, 2024 were identified using data from a medication dispensing cabinet report for the intubation kit, which included the induction agents. The primary objective is to evaluate the differences in pre-intubation and post-intubation shock index between etomidate, ketamine, and propofol. Secondary endpoints include: incidence of bradycardia (HR < 60 bpm) within 30 minutes of intubation, tachycardia (HR > 100 bpm) within 30 minutes of intubation, hypertension (SBP > 140 mmHg or DBP > 90 mmHg) within 30 minutes of intubation, hypotension (SBP < 90 mmHg or DBP < 60 mmHg) within 30 minutes of intubation, treatment of hypotension within 30 minutes of intubation, and dose of agent used for RSI. The safety outcome is 28 day ventilator-free days (VFD).

Results: In progress.

Conclusion: In progress.

global: Y

9:50am – 10:05am R **Pharmacist Impact Within a Post-Intensive Care Clinic at a Safety Net Hospital** Athena G

Moderators: Tia Collier
Presenters: Alexandria Howell
Evaluators: Sarah Frye

Title: Pharmacist Impact Within a Post-Intensive Care Clinic at a Safety Net Hospital

Objective: To evaluate the impact of a critical care pharmacist in the Post-ICU Clinic (PIC).

Self Assessment Question: Describe the most common interventions made by the critical care pharmacist in the PIC clinic?

Authors: Alexandria Howell1, Sam Pournezhad1, Tarun Kapoor2, Nicole Herbst3, Marina Rabinovich1

1. Grady Memorial Hospital; Atlanta, GA
2. Emory University Hospital, Atlanta, GA
3. Hershey Medical Center, Hershey, PA

Background: It is estimated more than half of intensive care unit (ICU) survivors are faced with a constellation of new symptoms following prolonged ICU stays. Post-ICU Syndrome is defined as new onset weakness, fatigue, cognitive decline, intrusive memories, and/or depression, and is associated with poor quality of life and increased risk of rehospitalization. ICU survivors require close follow-up with continuity of care to ensure all problems are appropriately addressed. Post-ICU Clinics have been established to combat these public health concerns; however, there are a limited number of clinics nationwide. The PIC at Grady Memorial Hospital is a multidisciplinary clinic consisting of a critical care clinical pharmacist, critical care physician, and physical medicine and rehabilitation physician. Pharmacists play a critical role in the clinic by evaluating the patient's quality of life and ensuring optimization of medication regimens.

Purpose: To describe and quantify the interventions made by critical care trained pharmacists in the post-ICU ambulatory setting.

Methods: This was a single centered retrospective chart review study evaluating critical care trained pharmacist interventions in the PIC Clinic from June 2022 to July 2024. Patients were referred to the PIC clinic if they spent more than 4 days in the ICU and/or more than 48 hours mechanically ventilated. Adult patients evaluated by the clinical pharmacist during the PIC visit were included for study evaluation. The primary endpoint was the total number of pharmacist interventions and median number per patient. Secondary endpoints included types of medication interventions and medications classes with interventions.

Results: One-hundred patients met inclusion criteria. More than half (53%) of patients were admitted to the medical ICU. The most common ICU diagnosis was respiratory failure (36%), followed by trauma (25%). Clinical pharmacists completed 254 interventions during the time period, with a median of 3 per patient (interquartile range [IQR] 1.8-4). The most common intervention was medication initiation (24%) followed by medication discontinuation (23%). Medication classes with the highest frequency of pharmacist interventions were analgesics (25%) followed by cardiac medications (22%).

Conclusion: **The critical care clinical pharmacist is a key member of the PIC by providing medication interventions with a median of 3 per patient. Medication interventions performed by the pharmacist may optimize patients' pharmacotherapy regimens and quality of life but additional studies are needed.**

global: Y

9:50am – 10:05am G **Implementing a Pharmacist Driven Proton Pump Inhibitor (PPI) Deprescribing Intervention in a Veteran Patient Population** Athena C

Moderators: Devki Gajera
Presenters: Kristin Allen
Evaluators: Erin Himes

Title: Implementing a Pharmacist Driven Proton Pump Inhibitor (PPI) Deprescribing Intervention in a Veteran Patient Population

Authors: Kristin Allen, Marisa Strychalski, Kye Grooms

Background:
Proton pump inhibitors (PPIs) are among the most commonly prescribed medications in the VA to treat acid-related stomach disorders. The American College of Gastroenterology (ACG) recommends up to an 8-week course of a PPI for symptomatic relief of gastroesophageal reflux disease (GERD). The PPI should then be tapered off and discontinued or switched to a histamine 2 receptor antagonist (H2RA) for maintenance therapy. The long-term use of PPIs can potentially lead to adverse events such as osteoporosis and bone fractures. Due to these potential long-term risk, they are also included on the American Geriatric Society (AGS) Beers Criteria for potentially inappropriate medication use in older adults. Furthermore, Veterans on long-term PPIs with a low BMI (defined as a BMI of 19 kg/m2 and lower) are at even higher risk of osteoporosis and bone fractures, as low BMI is an independent risk factor in and of itself. The purpose of this study was to limit the potentially inappropriate continuation of formulary PPIs in a geriatric Veteran patient population most vulnerable to developing or worsening osteoporosis by reducing the PPI dose, stopping the PPI, and/or switching to a formulary preferred H2RA.

Methods:
A data query identified geriatric Veterans (≥75 years old) who have an active prescription for omeprazole or pantoprazole for at least 2 years and had at least one of the following: a low BMI, a diagnosis of osteoporosis, or were on osteoporosis prevention/treatment in the last 2 years. Veterans who were deemed appropriate for intervention based on chart review were contacted by phone. Through shared decision-making, the Veteran either continued the PPI at their current dose, reduced the dose, discontinued the PPI, and/or switched to an H2RA and were then scheduled for telephone follow-up for any interventions made. The primary endpoint was the percent difference in PPI utilization following pharmacist intervention. The secondary endpoint was the difference in the total daily dose of the PPI and H2RA for all patients on therapy following pharmacist intervention. The tertiary endpoint was to determine if the results of the DEXA scans performed show new/clinically relevant findings and require intervention. Data collected also included baseline characteristics such as age, weight (in kilograms), body mass index, serum creatinine, sex, and if the patient had a DEXA scan on file with the VA.

Results:
25 patients were contacted and 72% of patients agreed to the deprescribing intervention. The utilization of low dose PPIs and high dose PPIs decreased by 8% and 24% and the utilization of as needed famotidine and non-pharmacologic strategies increased by 24% and 8% following pharmacist intervention. In total, 20% of Veterans were able to de-escalate PPI therapy and 32% were able to successfully discontinue the PPI and switch to as needed famotidine or non-pharmacologic strategies only. The total daily dose of PPIs decreased by 370 mg and the famotidine dose increased by 120 mg in total across 25 patients. One patient was started on a non-formulary PPI due to uncontrolled GERD symptoms on the formulary agents. Three out of four DEXA scans showed osteopenia/osteoporosis and two patients were started on treatment while one was referred to Endocrinology for further management.

Conclusion:
The pharmacist driven deprescribing intervention was able to de-escalate and discontinue PPI therapy, reduce the total daily dose of PPIs, increase the total daily dose of famotidine, and initiate osteopenia/osteoporosis treatment in those with new/clinically relevant DEXA scan results which illustrates the important role pharmacist

play in reducing the risk of adverse drug events and pill burden as well as improving the overall health of the geriatric Veteran patient population.

global: Y

9:50am – 10:05am | **Incidence of AKI Before and After Implementation of Pharmacy-Driven Acyclovir Protocol** Athena A

Moderators: Joseph Kohn
Presenters: Eryn Meegan
Evaluators: Melissa Padgett

Title: Incidence of AKI Before and After Implementation of a Pharmacy-Driven Intravenous Acyclovir Protocol

Authors: Eryn Meegan, Will Anderson, Dustin Ziegler, Kishan Patel

Objective: To assess the occurrence of AKI rates before and after implementing a pharmacy-driven intravenous acyclovir protocol aimed at optimizing dosing and intravenous hydration

Self-Assessment Question: True or False - Pharmacy involvement resulted in increased IV fluids ordered alongside IV acyclovir

Background: Acyclovir, a nucleoside analogue antiviral, is a well-recognized cause of drug-induced acute kidney injury (AKI) through crystal nephropathy, which results from intratubular obstruction due to crystalline precipitation in distal tubular lumens. In order to mitigate the risk of acyclovir-induced nephrotoxicity, the Cone Health Pharmacy and Therapeutics Committee approved and implemented a pharmacy-driven intravenous acyclovir protocol in May 2022. With this protocol, the pharmacy team aimed to improve patient safety by providing tailored dosing recommendations and ensuring appropriate fluid administration. The purpose of this study was to evaluate the effect of implementing this pharmacy-driven protocol on AKI rates.

Methods: This institutional review board-approved, retrospective cohort study evaluated the implementation of a pharmacy-driven protocol to reduce the risk of AKIs in patients on intravenous acyclovir. This study was conducted within Cone Health, a single hospital system, between April 2020 to August 2024. Patients were included if they were 18 years or older and received at least 24 hours of intravenous acyclovir within the pre-consult implementation period of April 2020 to April 2022 or the post-consult implementation period of August 2022 to August 2024. Patients were excluded if they had end-stage renal disease, presented with an AKI, if baseline renal function was unknown, or if serum creatinine was not trended throughout the duration of acyclovir treatment. The primary endpoint was the incidence of AKI as defined by the 2012 KDIGO guidelines: an increase in serum creatinine by greater than or equal to 0.3 mg/dL within 48 hours, or an increase in serum creatinine to greater than or equal to 1.5 times baseline within the prior 7 days. The secondary endpoint evaluates the protocol's effectiveness in preventing AKI by assessing duration of intravenous fluid administration ordered per protocol. Fisher's exact test and descriptive statistics were used to analyze the data as appropriate.

Results: Of the 120 patient charts reviewed, 31 met inclusion criteria (11 in the pre-implementation period and 20 in the post-implementation period). Baseline characteristics were similar between the two groups. Notably, more patients in the post-implementation group were on concomitant nephrotoxic agents compared to the pre-implementation group (13 patients vs. 8 patients). Median duration of acyclovir therapy increased from 2.4 days (IQR 1.7–4.0) in the pre-implementation group to 3.3 days (IQR 2.5–4.9) in the post-implementation group. The rate of AKI was 18% before implementation and increased to 25% after implementation, though this difference did not reach statistical significance (P = 0.38). Intravenous fluids were ordered for all patients (100%) compared to 82% pre-implementation, though this difference was not statistically significant (P = 0.12). The median duration of IV fluid administration significantly increased from 0.8 days (IQR 0.3–2.4) to 3.5 days (IQR 2.9–6.4) post-implementation (P = 0.0006). The rate of appropriate acyclovir dosing remained consistent between groups (91% vs 90%, P = 0.93). Similarly, the frequency of under-dosing was low and comparable (9% vs 10%, P = 0.99), and no patients in either group were over-dosed.

Conclusion: Implementation of a pharmacy-driven intravenous acyclovir protocol led to a significant increase in the duration of IV fluid administration. While the incidence of AKI was numerically higher in the post-implementation group, this difference was not statistically significant. Dosing accuracy remained high across both groups, with minimal under-dosing and no cases of overdosing observed. These findings suggest that the

protocol successfully enhanced supportive care practices without compromising dosing safety, though further evaluation in a larger cohort may be warranted to better assess its impact on AKI prevention.

global: Y

9:50am – 10:05am L **Impact of a Pharmacist-Led Glycemic Management Consult Service in Hospitalized Patients**

Presenters: Dion Blocker Parthenon 2

Evaluators: Jason Dover

Title: Impact of a Pharmacist-Led Glycemic Management Consult Service in Hospitalized Patients

Authors: Dion Blocker, Michelle Marbury, Mariam Agbe

Background: Diabetes is a major chronic health problem, and its prevalence continues to grow nationwide. If left uncontrolled, patients may develop microvascular and macrovascular complications, which can lead to morbidity, mortality, and decreased health-related quality of life. Wellstar Cobb Medical Center is the only hospital in the Wellstar Health System with a pharmacist-led glycemic management consult service. The clinical pharmacy team manages patients admitted to the hospital and makes a vast number of interventions. Based on the lack of evidence regarding pharmacist-led glycemic management, this study aims to evaluate the safety and efficacy of pharmacy-managed basal-bolus regimens in hospitalized patients.

Methods: The design of the study is a single-center, retrospective, noninferiority chart review of adult patients admitted to Wellstar Cobb Medical Center. A drug utilization report will be used to identify hospitalized adults who received insulin therapy at Wellstar Cobb Medical Center from January 2018 to July 2024. A maximum of 500 patients will be randomized and included from each treatment group. This study aims to examine the incidence of hypoglycemic events with a pharmacist-led glycemic-monitoring protocol compared to usual care. This study will compare the time to euglycemia after the first abnormal glycemic level, average incidence of hypoglycemic events, total length of stay, continued hyperglycemia after initial regimen, and hospital readmission within 30 days. Data will be obtained from Enterprise Data Analytics due to data query limitations identified in Epic Slicer Dicer. Adult patients with a past medical history of diabetes who are admitted with a blood glucose level greater than 140 mg/dL on basal, bolus, or continuous insulin will be included in the study. Patients using only sliding scale insulin, experiencing critically ill COVID-induced hyperglycemia, with concurrent insulin pump therapy, on hospice, or with consecutive readings of blood glucose 110-180 mg/dL with no more than two BG readings outside the range within 48 hours of admission without a pharmacy to dose basal bolus consult will be excluded from the study.

Results: The study analyzed 100 hospitalized adult patients divided into two groups: those managed by pharmacist-led glycemic consultation (n=50) and those managed by usual care without pharmacist consultation (n=50). Although not statistically significant, patients receiving pharmacist consultation achieved euglycemia faster (60.7 ± 49.9 hours) compared to the usual care group (93.2 ± 108.6 hours, p=0.05). Additionally, a significantly greater proportion of patients reached euglycemia in the pharmacist consultation group (82%) compared to the control group (50%, p=0.0007). The pharmacist consultation group experienced fewer cases of continued hyperglycemia 72 hours after insulin initiation (38% vs. 66%, p=0.005), which was statistically significant. Length of stay and hypoglycemic events did not significantly differ between groups.

Conclusion: Although not statistically significant, the pharmacist-led glycemic management consult service was associated with improved time to achieve euglycemia in hospitalized patients compared to usual care. Although there was no statistically significant difference in time to euglycemia, hypoglycemic events or length of hospital stay, pharmacist-managed care effectively achieved statistically significant effects on persistent hyperglycemia and achieving euglycemia. These findings support the integration of pharmacist services into hospital glycemic management protocols.

global: Y

9:50am – 10:05am L **Rates of Gastrointestinal Bleeding in Patients Taking Concomitant Dual Antiplatelet Therapy (DAPT) and SSRI/SNRI Therapy Within One Year of Acute Coronary Syndrome (ACS)** Parthenon 1

Moderators: Margaret Williamson
Presenters: Hannah Holbert, PharmD, MPH
Evaluators: Emily Johnson

Title: Rates of Gastrointestinal Bleeding (GIB) in Patients Taking Concomitant Dual Antiplatelet Therapy (DAPT) and SSRI/SNRI Therapy Within One Year of Acute Coronary Syndrome (ACS)

Authors: Hannah Holbert, Thaddeus McGiness, A. Shaun Rowe, Travis Fleming

Objective: Evaluate potential gastrointestinal bleeding risk associated with combined SSRI/SNRI and DAPT in patients receiving these medications for twelve months post-ACS.

Self-Assessment Question: Which of the following was associated with increased rates of GIB in patients at 12 months post-ACS? a. Aspirin + prasugrel + duloxetine; b. Aspirin + prasugrel + sertraline; c. Aspirin + clopidogrel + venlafaxine; d. Aspirin + ticagrelor + fluoxetine; e. None of the above

Background: Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) modulate serotonin, which promotes mood enhancement in the central nervous system (CNS) and hemostasis in the peripheral nervous system (PNS). Inhibition of serotonin reuptake in the CNS increases emotional stability, making SSRIs and SNRIs useful antidepressants. In the PNS, these drugs prevent serotonin-mediated platelet aggregation, increasing bleeding risk. Because depression is common following major adverse cardiovascular events, there is a potential for patients to take concomitant SSRI or SNRI therapy with dual antiplatelet therapy (DAPT) for 12 months post-percutaneous intervention. The purpose of this study was to evaluate if patients receiving this combination were at a greater risk of gastrointestinal bleeding due to multiple antiplatelet mechanisms compared to those receiving DAPT alone.

Methods: This single center retrospective cohort study included adult patients diagnosed with acute coronary syndrome (ACS) and treated with percutaneous intervention, stent implantation, and DAPT between January 1, 2014, to January 1, 2024. Patients were excluded from this study if they received DAPT for any indication other than ACS (e.g., ischemic stroke), if they had a previous diagnosis of cirrhosis, Helicobacter pylori infection, or cancer of the gastrointestinal tract, or if any of the following medications were on their discharge medication list: anticoagulants, systemic steroids, systemic non-steroidal anti-inflammatory drugs (NSAIDs), ginseng, garlic, ginkgo, or vitamin E. The primary outcome of this study was rates of gastrointestinal bleeding within 12 months of ACS diagnosis. Additional secondary outcomes included length of stay, therapy modifications at discharge, and 30-day and 90-day readmission rates.

Results: The primary outcome was observed in five patients (3%) in the DAPT group and no patients in the DAPT plus SSRI or SNRI group ($P = 0.336$). Readmission at 30 days occurred in 23 patients (13.6%) in the DAPT group and 10 patients (17.9%) in the DAPT plus SSRI or SNRI group ($P = 0.436$). Patients who were readmitted within 90 days of ACS discharge included 37 patients (21.9%) and 19 patients (33.9%) in the DAPT and DAPT plus SSRI or SNRI group, respectively ($P = 0.071$). There was no statistical difference between median length of stay between the two groups ($P = 0.430$). One notable baseline characteristic was a documented history of coronary artery disease (CAD). In the DAPT only group, the majority (106 patients; 62.7%) did not have a prior history of CAD, whereas 37 patients (66.1%) in the DAPT plus SSRI or SNRI group did have a documented history of CAD. This finding regarding past medical history of CAD was statistically different between both groups ($P < 0.001$).

Conclusion: This study found no statistical difference in the rate of GIB in patients who received DAPT compared

to those who received DAPT plus an SSRI or SNRI post-ACS. A statistical difference was observed, however, when comparing SSRI or SNRI use in patients based on prior history of CAD. Because patients with a prior history of CAD were more likely to take SSRIs or SNRIs, this study further endorses the use of these agents to treat secondary mental health disorders following ACS. Additionally, none of the patients in this study population who were taking SSRIs or SNRIs experienced a GIB, implying that use of these antidepressants could be considered both effective and safe in this population. More research should be conducted to further evaluate if the use of SSRIs or SNRIs in patients receiving DAPT for one-year post-ACS impacts rates of bleeding events, especially in women, racial minorities, patients who underwent elective PCIs, and patients who experienced other types of bleeding events.

global: Y

9:50am – 10:05am O **A Review of the Incidence of Pneumocystis Pneumonia Infection with or without Pneumocystis Pneumonia Prophylaxis in Patients with Brain Tumors** Olympia 2

Moderators: Kristen Kilby

Presenters: Gabrielle McCammack

Title: A Review of the Incidence of Pneumocystis Pneumonia Infection with or without Pneumocystis Pneumonia Prophylaxis in Patients with Brain Tumors

Authors: Gabrielle McCammack, Marley Watson, Danielle Rustem, Brooke Rowling, Benjamin Albrecht, Kimberly Hoang, Manali Rupji, Xiyuan Ji, Jeffrey Switchenko

Background: Temozolomide is an oral alkylating agent administered with radiation for high-grade gliomas. According to the temozolomide drug monograph, patients should receive prophylaxis against Pneumocystis pneumonia (PCP) while receiving concurrent chemotherapy and radiation treatment. However, the Infectious Diseases Society of America recommends prophylactic antibiotics in chemotherapy regimens with less than 3.5% risk of contracting PCP. There are many suspected risks factors for development of PCP, yet recent studies have shown the incidence of PCP infection in this patient population is low, less than 1%. In addition, prophylactic antibiotics for PCP are associated with side effects and additional costs for patients. The decision to prescribe PCP prophylaxis for patients at Emory Healthcare is provider specific. The purpose of this study is to determine the incidence of PCP development with or without PCP prophylaxis and evaluate possible risk factors correlating with PCP development.

Methods: This is a retrospective chart review of adult patients with brain tumors treated with concurrent phase temozolomide with radiation therapy at Emory Healthcare. Patients with high grade gliomas on concurrent temozolomide with radiation therapy will be included and will be categorized based on use of prophylactic antibiotics for PCP. Patients will be excluded for use of prophylactic antibiotics with activity against PCP for another indication, having reduced radiation courses, starting PCP prophylaxis after one week of chemotherapy treatment, or having insufficient documentation to confirm chemotherapy cycles. The primary outcome is to determine the incidence of PCP development with or without PCP prophylaxis, with safety as a secondary outcome. Descriptive statistics using mean and standard deviations for numerical variables and frequency and percentages for categorical clinicopathological variables.

Results: A total of 67 patients were included in the study, 20 received PCP prophylaxis, 47 did not receive PCP prophylaxis. The mean age of patients was 54 years old in the prophylaxis group, and 55 in the without prophylaxis group. Most patients were on high dose steroids (prednisone equivalents > 20mg daily) for 1 month prior to treatment; 15 (75%) in the with prophylaxis group and 38 (80.9%) in the without prophylaxis group. Three patients in the without prophylaxis group had an immunocompromising condition at baseline; with 2 (4.3%) patients on hydroxychloroquine and 1 (2.1%) patient on infliximab. For patients on PCP prophylaxis, 9 (45%) were on trimethoprim/sulfamethoxazole, 10 (50%) inhaled pentamidine, and 1 (5%) on atovaquone. No patients developed a PCP infection; therefore, an analysis was not performed.

Conclusion: No cases of PCP were found for patients on treatment or 90 days post treatment in either the with or without prophylaxis groups. No events occurred despite 79.1% and 4.5% of the patient population being on high dose steroids or immunocompromising medications, respectively. Though some patients had a reduction in ALC while on treatment, more data is needed to determine if this is a true risk factor for development of PCP infection. Larger studies are needed to further assess and define risk factors for developing PCP infection while on concurrent temozolomide and radiation treatment and ultimately create a risk stratification tool that can better identify patients requiring PCP prophylaxis to minimize additional medication use and side effects.

global: Y

9:50am – 10:05am S **Initiative To Improve Lithium Safety Monitoring at Veterans Affairs Medical Center** Olympia 1

Presenters: Cydney Nicholson Smalls

Evaluators: Stephanie Ring, Abbi Rowe

Title: Initiative To Improve Lithium Safety Monitoring at Veterans Affairs Medical Center

Authors: Cydney Smalls, Carrie Sartin, William Erwin

Objective: To evaluate the effectiveness of recommendations provided by a pharmacist via chart review regarding lithium therapeutic drug levels and safety monitoring for Veterans.

Self-Assessment Question:

Background: Lithium is a well-established therapy for mood disorders, known for its effectiveness in mood stabilization and significant reduction in suicide risk. Despite its clinical benefits, lithium therapy is challenging due to its narrow therapeutic index, making patients susceptible to toxicity. Consequently, frequent monitoring of serum lithium levels and organ function (Scr, ECG, TSH, electrolytes, CBC) is critical. This quality improvement initiative aims to evaluate the impact of clinical pharmacist recommendations provided via chart notifications on enhancing lithium monitoring practices.

Methodology: This quality improvement project is designed as a multi-center, prospective cohort analysis, exempt from Institutional Review Board approval. It investigates provider responses to clinical pharmacist recommendations made through a chart-based review for Veterans on lithium therapy at the Fayetteville NC VA Coastal Health Care System (FNCVACHCS). Participants were identified using the Veterans Affairs Lithium Lab Monitoring Dashboard. Recommendations were communicated to providers using a standardized note template embedded within the computerized patient record system (CPRS). The primary outcome measures the percentage of recommendations accepted by prescribers, determined by new orders placed within one week of the note's documentation. Secondary outcomes include evaluating the average duration between note documentation and completion of recommended safety monitoring tests, incidence rates of supra-therapeutic lithium levels along with associated side effects, and the proportion of accepted recommendations not carried out by patients.

Results: Forty-six notes were entered to communicate recommendations to prescribers. Regarding the primary outcome, providers accepted 37% (17) of these recommendations. The average time from note entry to completion of recommended safety monitoring tests was 13 days. Notably, no supratherapeutic lithium levels were reported during the observation period. However, 47.1% (8) of provider-accepted recommendations were not completed by patients, indicating a significant gap between provider acceptance and patient adherence.

Conclusions: Despite the inconsistent laboratory monitoring parameters for Veterans on lithium therapy, the results showed that Veterans for whom lab values were reviewed showed no significant concerns. There were limitations with the initiative which included providers not acknowledging the recommendation within the computerized patient record system (CPRS), resulting in variability in the implementation of recommended monitoring practices. Identified barriers, including time constraints and alert fatigue, likely contributed to this inconsistency. Addressing these challenges through targeted education, streamlined workflows, and supportive feedback is essential to enhancing provider adherence, thereby ensuring consistent patient safety practices. Efforts to mitigate these barriers are crucial to sustaining the initiative without placing undue burden on healthcare providers.

global: Y

9:50am – 10:05am T **Evaluation of Pharmacists' Review on Discharge Medication Reconciliation in Transitions of Care** Athena I

Moderators: Charleen Melton, PharmD, BCCCP
Presenters: Courtney Reliford
Evaluators: Brittny Medenwald

Title: Evaluation of Pharmacists' Review on Discharge Medication Reconciliation in Transitions of Care

Authors: Courtney Reliford, Sydney Bowman, Leborah Cole Lee, Randy Hooks, Kayla Brown

Objective: To evaluate discharge medication reconciliation accuracy in patients with a pharmacist's review and in patients without a pharmacist's review.

Background: Medication reconciliation is a critical component of safe transitions of care. The transition period from the hospital to home or another facility is a vulnerable period for patients and presents various opportunities for pharmacist involvement. Studies have demonstrated the value of pharmacists in transitions of care and medication reconciliation. According to the World Health Organization, more than 40 percent of medication errors may result from inadequate reconciliation in handoffs during hospital admission, transfer, and discharge. Within our institution, pharmacists review 30 to 40 percent of discharge medication reconciliations. This project is designed to evaluate discharge medication reconciliation for accuracy for patients with and without a pharmacist's review.

Methods: The Institutional Review Board approved this retrospective chart review of discharge medication reconciliation accuracy in patients with a completed pharmacist's review and patients without a pharmacist's review. Study participants were randomly selected for review based on discharges between January 1, 2023, through May 31, 2024. Study participants were randomized to either a control group or a pharmacist reviewed transitions of care group. The primary outcome was the incidence of medication discrepancies at discharge with a pharmacist's review versus medication discrepancies without a pharmacist's review. Secondary outcomes included average number of discrepancies per patient, discrepancies by patient location, discrepancies by physician specialty group, length of stay, percentage of patients with a discrepancy related to high-risk medications, type of discrepancies, and 30-day and 90-day hospital re-admission rates. Types of discrepancies included dose, route, frequency, medication, duplication, omission, unnecessary order, and untreated indication. Data were analyzed using Chi-Square, Fisher's Exact test, Student's t-test or Mann-Whitney U, depending on data type and distribution.

Results: A total of 17,675 patients were identified over the study timeframe and randomized. Two hundred and nine patients were screened for inclusion: 99 in the pharmacist intervention group and 110 in the control group to achieve a total of 75 patients in each group. Baseline characteristics were comparable between the two groups, except for the total number of discrepancies identified (29 discrepancies in the control group (3%) vs. 11 discrepancies in the pharmacist review group (1%), $p = 0.005$). There were fewer patients with a medication discrepancy in the pharmacist review group compared with the control group (31 % vs. 5%, $p < 0.001$). The median number of discrepancies also differed between the groups (IQR: 0-1 in the control group vs. 0-0 in the pharmacist review group, p value <0.001). While 30-day readmissions rates were similar between the groups, 90-day readmissions differed with 20 readmissions in the control group (27%) versus 8 readmissions (11%) in the pharmacist review group ($p = 0.012$). There were no statistically significant differences in discrepancies for high-risk medications between groups, defined as anticoagulants, potassium, narcotics, and insulin.

Conclusions: This study showed clinically and statistically significant reductions in discrepancies on discharge as well as lower 90-day readmission rates when discharge medications were reviewed by a pharmacist, showing benefit of pharmacists' participation in transitions of care. Strengths of this study include the inclusion of multiple different pharmacists' review on medication reconciliations, and inclusion of diverse patient populations. Limitations include a small sample size and inclusion of surgery patients who often have little to no changes in home medications. Future studies could provide a more thorough review of discrepancies across the continuum

of care.

global: Y

10:20am – 10:35am A **Optimizing Patient Care: The Role of Pharmacy-Driven Nursing Education in Enhancing Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Scores** Olympia 1

Moderators: Stephanie Smith
Presenters: Leah Franks
Evaluators: Drew Kessell

Title: Optimizing Patient Care: The Role of Pharmacy-Driven Nursing Education in Enhancing Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Scores

Authors: Leah Franks and David Collette

Background: The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is a national patient satisfaction tool that measures the perception of hospital care. This survey is completed by patients after discharge. Associated scores are directly linked to hospital reimbursement and STAR ratings. A review of recent Huntsville Hospital HCAHPS results revealed that scores were lowest surrounding the Communication about Medicines Domain. This domain addresses whether the indications and side effects of medications were discussed with patients during their hospital stay. Thus, the purpose of this pharmacy pilot project is evaluating if targeted pharmacy education on low-scoring nursing units results in an HCAHPS score improvement.

Methods: A single-center, institutional review committee approved, pre-post analysis was conducted at Huntsville Hospital to assess the impact of pharmacist-driven education as it relates to HCAHPS score improvement. The primary endpoint for this study was HCAHPS Top Box score improvement regarding the “Communication about Medicines” HCAHPS domain. This study reviewed HCAHPS data (provided by Press-Ganey (PG)) between November 2023 to February 2025. As principal investigator, I worked with the Patient Experience Team to develop education materials for both nurses and patients in an effort to improve the patient experience in regards to the communication surrounding medication administration. Education materials developed included medication tip sheets and nursing education documents. Discussion with nursing unit directors and educators regarding advantages and barriers to success was required before implementation of process change could take place. Analysis was performed by PG and sent to primary investigator for review for pre-data (November 2023 – February 2024) and post-data (November 2024 – February 2025).

Results: A medical unit, two surgical units (A & B), and a neurological unit were included in the study. Pre-implementation Top Box Percentage scores (PG Percentile Rank) were as follows for each unit: Medical Unit – 59.72 (50), Surgical Unit A – 49.28 (5), Surgical Unit B – 57.29 (35), and Neurological Unit – 67.45 (89). Post implementation Top Box scores (PG Percentile Rank) were as follows: Medical Unit – 60.29 (45), Surgical Unit A – 67.43 (85), Surgical Unit B – 54.17 (13), and Neurological Unit – 44.00 (1). Monthly trends of each unit reveal fluctuations in overall data surrounding the primary endpoint. In addition, at a pilot study debrief with hospital administration and nurse managers for each of the four units, differences in implementation methods for each unit was reported.

Conclusion: Overall, mixed results were seen across the units regarding the primary endpoint. A numerical increase was seen in the Top Box Scores for two out of the four units. Of note, after implementation differences were noted in the debrief, it was concluded that having a higher degree of nurse leadership integration/dissemination of the medication tip sheets correlated with higher HCAHPS Top Box scores. Limitations included the variations in nursing unit implementation of the pilot project, nurse turnover, inability of primary investigator to participate in repeat educations for nursing units, and small sample size. A clear, general implementation plan would need to be utilized before hospital-wide or system-wide implementation could take place.

global: Y

10:20am – 10:35am B **Impact Assessment of Food Deserts and Food Insecurity on Diabetes Mellitus** Athena D

Moderators: Ashley Woodhouse
Presenters: Allison Eppenauer
Evaluators: Anne Warren

Title: Impact Assessment of Food Deserts and Food Insecurity on Diabetes Mellitus

Authors:
Allison Eppenauer

Background:
The worldwide epidemic and challenges of managing diabetes mellitus (DM) is partially driven by the intake of nutrient-poor and highly processed foods, however access to nutrient dense foods can be limited by financial restrictions and proximity to supermarkets. Areas of low access have been identified by the United States Department of Agriculture (USDA) Economic Research Service (ERS) Food Access Research Atlas as 'food deserts'. As negative health outcomes of residing in food deserts or experiencing food insecurity have been previously demonstrated in other studies, this study aims to evaluate if these factors are an area that requires additional focus within the current population of patients with DM at the Ralph H. Johnson Veterans Affairs Healthcare System (RHJVAHS). Identification or focus on patients residing in food deserts or experiencing insecurity may allow clinicians to streamline preventative interventions during diabetes management to improve outcomes.

Methods:
This project is a retrospective observational longitudinal cohort study for quality improvement comparing DM outcomes in veterans residing in a food desert/experiencing food insecurity and those not residing in a food desert/experiencing food insecurity. Eligible patients in the study included all patients enrolled within the RHJVAHS catchment area who had an active ICD 9/10 code diagnosis of DM or A1c > 6.5% between January 1, 2016 and December 31, 2018 with at least one annual visit with a VA provider in a primary location. Patients were then targeted over a follow up period to include lab values, hospitalizations, and deaths during the follow up period.

The primary endpoint for this project was to determine if there is a significant difference in the frequency of uncontrolled A1c or urine albumin-creatinine ratio (UACR) based on a composite status of residing in a food desert or experiencing food insecurity and food insecurity alone. The secondary endpoint analyzed the difference in the frequency of all-cause hospitalizations, DM-related hospitalizations and mortality based on a composite status of residing in a food desert or experiencing food insecurity and food insecurity alone.

Results: Of the 4,209 veterans included in this study, 2054 (49%) patients were found to be residing in a food desert. 18 (0.004%) of patients screened positive for food insecurity. The primary outcome of uncontrolled A1c and UACR did not differ significantly between between the composite group of non-food desert/non-food insecurity (NFD/NFI) vs food-desert/food insecurity (FD/FI). A1c >7% occurred in 45.7% of NFD/NFI vs. 44.2% FD/FI; p = 0.338.) A1c >8% occurred in 16.8% of NFD/NFI vs. 15.1% FD/FI; p = 0.133.) UACR >30 occurred in 39.1% of NFD/NFI vs. 39.5% FD/FI; p = 0.791. UACR >300 occurred in 4.2% of NFD/NFI vs. 5.4% FD/FI; p = 0.167.

The primary outcome did not differ in patients with food insecurity alone with overall similar findings to the composite group. Although not statistically significant, patients with food insecurity had higher UACR >30 (63.6% in those experiencing food insecurity vs. 39.2% in those without, p = 0.098.)

The secondary outcome of all-cause hospitalization rate, DM-related hospitalizations, and mortality did not differ between NFD/NFI vs. FD/FI - about 20% of patients were hospitalized for any reason, 4% hospitalized due to complications of DM, and~20% of patients passed away. In food insecurity alone, all-cause hospitalizations was higher in those experiencing food insecurity vs. those not (44.4% vs 20.8%, respectively, OR 3.0 (1.2 - 7.7); p = 0.014.) DM-related hospitalizations did not differ between groups (3.7% in food insecurity vs. 5.6% in non-food insecurity; p = 0.864.) Mortality was also higher in patients with food insecurity (44.4% vs 20.2%, respectively, p = 0.018)

Additionally, patients with food insecurity had higher odds of missing a UACR lab value within the reporting period (19.7% vs 38.9%; OR 2.6 (1.0 - 6.7) ; p = 0.042.)

Conclusion:
In summary, there was no difference in DM outcomes (UACR, A1c, hospitalizations, or mortality) between patients residing in a food desert/experiencing food insecurity versus those who are not. Patients with food insecurity were less likely to be evaluated for UACR despite the fact their UACR >30 trended higher than patients without food insecurity. Additionally, patients with food insecurity were more likely to be hospitalized for any reason or have higher mortality rate than those without food insecurity. The project was limited by the small patient population included in the food insecurity group which likely contributed to underreported findings. Data was not collected from other facilities, limiting the information available for patients seen at other medical centers which is an especially important consideration for patients residing in rural areas that may not seek care at the VA facility a significant distance away. Patients were also excluded if their address changed during the follow-up period.

global: Y

10:20am – 10:35am B **Implementation of the Pharmacogenomic Testing for Veterans (PHASER) Program among High Suicide-Risk Veterans: A quality improvement project** Athena C

Moderators: Devin Lavender
Presenters: AJ Obiako, Adirika Obiako
Evaluators: Crystal Wright

Title: Implementation of the Pharmacogenomic Testing for Veterans (PHASER) Program among High Suicide-Risk Veterans: A quality improvement project

Authors: Adirika Obiako, Christina Laird, Shari Brown, Tiffany Jagel

Objective: The primary objective of this quality improvement project is to increase testing and evaluate the impact of implementing PHASER in patients that are at a high risk of suicide who are on a mental health medication impacted by the PHASER panel.

Background: PHASER is an initiative designed to provide patients and providers access to high quality, evidence-based pharmacogenomic laboratory testing and recommendations that help optimize medication efficacy and reduce trial and error prescribing. The PHASER panel tests 15 different genes and multiple alleles that impact drug metabolism of over 73 commonly prescribed medications.

Methods: Patients flagged for a high risk for suicide have been identified from the High-Risk Flag Patient Tracking Report. Once these patients were identified, patients' mental health medication regimen was reviewed to see if they were taking any mental health medications that were impacted by the PHASER testing panel. Patients on the high suicide risk dashboard were contacted and offered testing. Testing was ordered and scheduled for patients that were agreeable. Patients completed a one-time blood draw which was sent to a third-party testing facility where the test was performed and analyzed. Results were uploaded to patient medical records. The results highlight the type of metabolizer for each of the 15 genes and which of the 73 medications may require dose modification. Medications impacted were listed. When required, evidence-based dose adjustments were advised to prescribers based on Clinical Pharmacogenetics Implementation Consortium (CPIC) guidelines.

Results: 19.7% of candidates completed testing and their appointment with the pharmacogenomics pharmacist to review results for potential medication changes. Variants for cytochrome enzymes involved in pharmacogenomics influenced major depressive disorder medication metabolism were common. CYP2B6 and CYP2C19 had 53.6% variance present. CPY2D6 had 54% variance present. All of the patients included in the project had 1 of 3 cytochrome enzymes impacted and 51.3% who had 2 or more impacted. An average of 4.6 of the panel's 16 pharmacogenomic influenced major depressive disorder medications were impacted. 33.3% of patients had an actionable variant for a currently prescribed major depressive disorder medication and 20% required a pharmacogenomic guided dosage adjustment due to patient reported adverse drug event. These patients had been on their major depressive disorder medication for less than 3 months. 46.3% had been on major depressive disorder therapy for 3 months or more with no issues reported with adverse drug events or efficacy.

Conclusion: Definitive conclusions cannot be draw outside of the objective data reported, but some interesting parallels with what has been reported in the literature were noted. The literature reports Veterans carry at least 1 pharmacogenomic variant that can impact therapy decisions. We found these patients averaged 6 variants that impacted an average of 16 medications on the 73-medication panel. 1.6 of those variants were for a cytochrome enzyme involved in processing of pharmacogenomic influenced medications for major depressive disorder.

Literature reports patients fail an average of 2-3 medications before finding symptom relief with depression. For 80% of the patients that completed testing this was true. These patients failed an average of 2.5 trials and this included pharmacogenomic influenced major depressive disorder medication trials only, it did not include trials for major depressive disorder medications that are not influenced by pharmacogenomics.

global: Y

10:20am – 10:35am R **Antidote Assessment in a Community Health System** Athena G

Presenters: Madison Owen

Evaluators: McKenzie Hodges, Blake Johnson

Title: Antidote Assessment in a Community Health System

Authors: Madison Owen, Rachel Rumbarger, Jon Oriet, Jonathan Worley

Objective: Identify antidote management trends to improve patient safety and outcomes.

Self Assessment Question: Which of the following is a key factor in improving patient outcomes related to antidote management?

Background: Antidotes are essential in the management patients with toxic exposures, as delays or unavailability can significantly increase morbidity and mortality. However, global deficiencies in antidote stocking arise due to infrequent use, limited education, inadequate awareness, supply chain interruptions, and constrained hospital resources. Expert consensus guidelines for antidote stocking in hospitals were updated in 2018 to address these challenges. Cone Health initially evaluated its antidote PAR (Periodic Automatic Replenishment) levels in 2018, based on these guidelines. Since then, changes in drug availability, the introduction of new antidotes, system expansions, and a lack of routine oversight necessitated a 2024 review. This review identified misalignments with updated guidelines, leading to system-wide inventory adjustments at emergency care locations. Changes were driven by guideline recommendations, usage patterns, waste considerations, and cost-effectiveness, leading to adjustments in PAR levels for 18 antidotes across multiple closely located sites. This study aimed to evaluate current antidote practices and assess whether recent inventory changes improved alignment with guidelines and patient care.

Methods: This was a multi-center, IRB-approved, retrospective study that evaluated patients who received a select antidote for a toxicological emergency at four hospitals and two free-standing emergency departments within Cone Health. Exclusion criteria included incomplete medical records, antidote use outside of toxicological emergencies, or patients treated in non-emergency settings. Utilizing the 2018 Expert Consensus Guidelines for Stocking of Antidotes in Hospitals That Provide Emergency Care and the in-house hospital vulnerability assessment updates and antidote indication and dosing updates, the inventory PAR levels for antidotes at Cone Health were updated, resulting in modifications to the PAR levels for digoxin immune fab, glucagon, and 16 other antidotes. A pre-post intervention design was used, with pre-intervention data collected from March 2018 through March 2024 and post-intervention data from April 2024 through February 2025. The primary objective was to assess the composite appropriateness of antidote utilization based on guideline recommendations, including dose accuracy and time to administration. Secondary objectives included evaluating individual metrics for dose and administration timing and determining the adequacy of current antidote inventory. Descriptive statistics were utilized for analysis.

Results: A total of 231 patients met inclusion criteria, with 128 in the pre-intervention group and 103 in the post-intervention group. Following antidote inventory adjustments, adherence to guideline-recommended dosing improved, with no cases of suboptimal dosing in the post-intervention group. For the composite primary outcome, optimal timing was achieved in 70% (90/128) of cases and optimal dosing in 97% (124/128) in the pre-intervention group, compared to 71% (73/103) and 100% (103/103), respectively, in the post-intervention group. Despite modifications to PAR levels, including increases for some antidotes, no instances of stock depletion leading to treatment delays were observed. Inventory adequacy was maintained across all emergency care sites.

Conclusion: Optimizing antidote inventory based on updated guideline recommendations improved adherence to dosing accuracy and administration time without compromising availability. The modest reduction in administration time suggests improved efficiency, though further enhancements could positively impact patient outcomes. These findings underscore the importance of routine antidote inventory assessments in improving patient safety and resource management. Future research should focus on prospective antidote utilization

evaluation, identifying opportunities for optimization through order set utilization, and cost-effectiveness analysis to refine stocking strategies further.

global: Y

10:20am – 10:35am R **Characterization of External Ventricular Drain-Associated Ventriculitis** Athena I

Moderators: Anne-Kathryn Priest
Presenters: Jordan Glasgow
Evaluators: Robin Fischer

Title: Characterization of External Ventricular Drain-Associated Ventriculitis
Authors: Jordan Glasgow (Jordan.Glasgow@wellstar.org), Joy Peterson, Karen Barlow
Objective: Identify risk factors for developing ventriculitis after the placement of an EVD.
Self-assessment Question: Which of the following may be a risk factor for EVD-associated ventriculitis?
Background: Hospital-acquired infections (HAI) increase morbidity, mortality, and healthcare costs. However, HAI associated with external ventricular drains (EVDs) are not routinely tracked. Surveillance of these infections can help identify risk factors, causative pathogens, and preventative strategies. The aim of this study is to characterize patients who develop ventriculitis after EVD placement in a large community teaching hospital. We seek to identify practical monitoring parameters and modifiable risk factors to improve patient outcomes in the neurocritical care unit.
Methods: This is an observational, retrospective chart review of patients admitted to Wellstar Kennestone Regional Medical Center (WKRMC) from December 2021 to August 2024 with a diagnosis of ventriculitis after EVD placement. Additional eligibility criteria are patients ≥ 18 years of age with an EVD in place ≥ 24 hours. Descriptive statistics were performed are the data.
Results: A total of eighteen EVDs were placed in nine patients with ventriculitis in this IRB-approved study. Each patient had a median of two EVDs installed during their stay and received an average of 15.5 ± 11.12 days of antibiotic therapy. The median length of stay in the neurocritical care unit (neuro ICU) and hospital was 28 days (25-29) and 31 days (25-34), respectively. Two EVDs were placed in the Emergency Department (ED) (11.1%), seven EVDs were placed in the neurocritical care unit (ICU) (38.9%), and nine EVDs were placed in the operating room (50%). Ten of the eighteen EVDs (55.6%) were associated with ventriculitis. Of these ten EVDs, five were linked to culture confirmed ventriculitis, while the other five were associated with a clinical diagnosis of ventriculitis. All EVDs placed in the ED were linked to ventriculitis, while four EVDs placed in both the neuro ICU and OR were also linked to ventriculitis. Among the EVDs associated with culture positive ventriculitis, three were used for intrathecal medication administration. The isolated pathogens in cultured confirmed ventriculitis include Enterobacter cloacae, Neisseria spp, Serratia marcescens, and non-ESBL Klebsiella aerogenes.
Conclusion: Insertion of multiple EVDs and EVD manipulation may be associated with the development of ventriculitis. Additionally, the number of bedside EVDs linked to ventriculitis may be similar to those placed in the operating room. However, further studies including patients who do not develop ventriculitis after EVD placement as a comparator are needed to assess the incidence of ventriculitis following bedside installation.

global: Y

10:20am – 10:35am R **Evaluation of Pseudoephedrine as Adjunctive Therapy in Acute Spinal Cord Injuries** Athena H

Moderators: Maggie Goode
Presenters: Gianna Antinone
Evaluators: Madeline Motes

Title: Evaluation of Pseudoephedrine as Adjunctive Therapy in Acute Spinal Cord injuries

Authors: Gianna Antinone, Taylor Law, Amanda McKinney, Mary Massaro, John Gripentrog, Stephanie Scott, and A. Shaun Rowe

Objective: To evaluate the efficacy of pseudoephedrine as an adjunctive agent to IV vasopressors in acute spinal cord injuries

Self Assessment Question: True/False: The addition of oral pseduoephedrine to IV vasopressors for MAP augmentation post-SCI resulted in a short duration of IV vasopressors. Answer: False

Background: Spinal cord injury (SCI) is defined as acute traumatic damage to the spinal cord, resulting in temporary or permanent neurolgical damage. Neurogenic shock, defined as bradycardia and hypotension, is common within this population. The relative recommendation immediately after injury is to augment mean arterial pressure (MAP) to a goal of 85-90 mmHg for one week to adequately perfuse the spinal cord. Commonly used treatments for MAP augmentation include intravenous (IV) and oral vasopressors such as pseudoephedrine (PSE) and midodrine. This study evaluates the efficacy of pseudephedrine as an adjunctive agent to IV vasopressors in patients with acute spinal cord injuries.

Methods: We performed a retrospective cohort study of trauma-surgical critical care patients at the University of Tennessee Medical Center from October 1, 2015, to January 1, 2024. Patients were included if 18 years of age and older, diagnosed with a spinal cord injury, and required IV vasopressor intiation upon admission to achieve a MAP goal > 85 mmHg for the first 5 days after injury. Patients were divided into two groups of either vasopressor monotherapy or vasopressor in combination with PSE to augment the goal MAP. The primary outcome of this study compared the time to IV vasopressor discontinuation between the two groups. Secondary outcomes included incidence of central line placement and duration, ICU and hospital length of stay, all-cause ICU and hospital mortality, successful discontinuation of IV vasopressors post-pseduoephedrine initiation, IV vasopressor re-initation within 24hrs of discontinuation, and incidence of bradycardia.

Results: Among the 751 patients identified for inclusion, 201 patients met inclusion criteria, of which 136 patients received vasopressor monotherapy, whereas 65 patients received vasopressor plus adjunctive PSE to maintain MAP goals. The duration of IV vasopressors was 70 hours versus 106 hours in the adjunctive PSE group (p=0.0299). Central line placement, duration of central line placement, hospital and ICU length of stay, hospital mortality, and ICU mortality were similar between the two groups. 80.7% of patients has successful discontinuation of vasopressors once PSE was initated. The incidence of bradycardia was more prominent in the adjunctive PSE group (44.6%) compared to vasopressors alone (25.7%), p=0.0072.

Conclusion: Although this study did not meet the primary outcome of reducting time to IV vasopressor discontinuation, this study demonstrated successful discontionuation of vasopressors post-PSE iniation in 80% of the study population who received PSE as adjunctive therapy. This study is limited by a small sample population and retrospective nature.

global: Y

10:20am – 10:35am | I

Clinical and Microbiologic Characteristics of Candida auris Isolates at Grady Health System

Presenters: Saira Mirza

Athena B

Evaluators: Laura Schalliol, Avery Shawen

Title: Clinical and Microbiologic Characteristics of *Candida auris* Isolates at Grady Health System

Authors: Saira Mirza, PharmD; Joseph Corbino, PharmD, MSc; Shreena Advani, PharmD; Joseph Torrisi, PharmD; Sheetal Kandiah, MD, MPH; Susan M. Ray, MD

Objective: The objective of this study was to identify risk factors associated with increased mortality among admitted individuals with pathogenic cultures for *Candida auris* and assess sensitivities to currently recommended antifungal agents.

Self-Assessment Question: What was a significant risk factor contributing to mortality in this study?

Background: First isolated in 2009 from the ear canal of Japanese individuals, *Candida auris* has quickly emerged as an important pathogen of worldwide concern. *C. auris*, similar to other

global: Y

10:20am – 10:35am | **Impact of Guideline Implementation on Management of Long Bone Osteomyelitis** Athena A

Moderators: Brian Knott
Presenters: Melat Endashaw
Evaluators: Cameron Lanier

Title: Impact of Guideline Implementation on Management of Long Bone Osteomyelitis

Authors: Melat Endashaw, Jessica Howard-Anderson, Jesse Jacob, Trinh Vu, K. Ashley Jones

Purpose: This study aims to evaluate the impact of a standardized approach to managing osteomyelitis of long bones and foot on hospital length of stay, readmission rates, and antibiotic-related adverse events. The results of this study may support novel strategies for the treatment of complex bone infections.

Background: Standard treatment for osteomyelitis, including diabetic foot osteomyelitis (DFO), usually requires surgical intervention followed by prolonged courses of intravenous (IV) antimicrobials. Emerging evidence suggests that oral antimicrobials can effectively treat complex bone and joint infections, offering similar therapeutic outcomes while reducing cost and complications. The 2019 Oral Versus Intravenous Antibiotics (OVIVA) Trial demonstrated these findings, prompting changes in clinical practices at various institutions. Recently, the Infectious Diseases Society of America (IDSA) and International Working Group on the Diabetic Foot (IWGDF) published a guideline recommending oral therapies as acceptable treatments for patients with DFO and shorter treatment durations in certain cases. In August 2023, Emory University Hospital Midtown, an academic medical center in Atlanta, Georgia, implemented institutional guidance on osteomyelitis of long bones and foot, including DFO, that created OVIVA and IWGDF informed, standardized recommendations on the selection of empiric and pathogen-directed therapies with a focus on minimizing the need for IV antimicrobials and outpatient parenteral antimicrobial therapy (OPAT), while promoting oral therapy for stable patients after adequate source control. It also addresses the importance of multidisciplinary involvement to provide a clear framework for managing osteomyelitis of long bones and DFO, with the goal of streamlining and optimizing care for these patients.

Methods: This is a single-center, retrospective study evaluates adult patients diagnosed with osteomyelitis of long bones, including DFO, who received antibiotic treatment. The study population were evaluated in two groups: patients treated prior to guideline implementation from October 1, 2022 to March 31, 2023 and patients treated after guideline implementation from February 1, 2024 to July 31, 2024. Exclusion criteria included patients with implanted hardware at the infection site, septic arthritis or native vertebral osteomyelitis, necrotizing or non-bacterial infection, blood cultures positive for Staphylococcus aureus or Staphylococcus lugdunensis, or concurrent invasive infection without sufficient evidence for use of oral antimicrobials (e.g., endocarditis, meningitis). Patients who underwent curative amputation without further intent to treat with antibiotics for osteomyelitis were also excluded. The primary outcome was hospital length of stay. Secondary outcomes include rates of readmission and antibiotic-related adverse events. Statistical analysis used rank-sum and chi-squared tests, with an alpha of 0.05 to determine statistical significance.

Results: Of the 545 patient charts reviewed, 98 met inclusion criteria (45 pre-implementation group and 53 post-implementation). Baseline characteristics were similar between groups. Notably, more patients were discharged on oral therapy in the post-implementation group compared to pre-implementation (64.2% vs. 53.3%, p=0.28). Median length of stay was similar in the pre- and post-implementation groups (13 days vs. 12 days; p=0.26). Readmission rates (37.3% vs. 48.8%, p=0.26) and antibiotic-related adverse events (25.5% vs. 37.2%, p=0.23) were lower post-implementation though not statistically significant.

Conclusion: The implementation of institutional guidance for the treatment of long bone osteomyelitis, including DFO, may improve patient outcomes such as hospital length of stay, readmission rates, and complications, though our study was limited with a small sample size.

Contact: melat.endashaw@emoryhealthcare.org

global: Y

10:20am – 10:35am L **Impact of Hyperglycemia Education on Blood Glucose Control** Parthenon 1

Moderators: Matt Conley

Presenters: Maegan Huebner

Evaluators: Eric Marr

Title: Impact of Hyperglycemia Education on Blood Glucose Control

Authors: Maegan Huebner, Kaitlyn Claybrook, Martina Goings, Danna Nelson

Objective: To evaluate the impact of provider hyperglycemia management education at Baptist Medical Center South through its effect on inpatient glucose control.

Background: Hyperglycemia in hospitalized patients, defined as a serum blood glucose level greater than 140 mg/dL, is a common occurrence in acutely ill patients. The American Diabetes Association (ADA) currently recommends the use of insulin as the preferred treatment for hyperglycemia in the inpatient setting. Basal or basal plus bolus regimens are preferred, while prolonged sliding scale as sole hyperglycemia treatment is not recommended. Recommendations for maintaining blood glucose less than 180 mg/dL and tailoring insulin regimens around patient enteral intake can improve outcomes, shorten patient length of stay, and reduce readmission rates. To increase adherence to ADA guidelines, physician groups including family medical residents, general medicine residents, and hospitalists from Baptist Medical Center South received a 30 minute interactive presentation on hyperglycemia management.

Methods: This is a retrospective chart review of pre and post physician education for patients who had an order for sliding scale insulin and a serum blood glucose level greater than 200 mg/dL. Patients excluded were those less than 19 years old, prisoners, patients with a singular increased blood glucose level, patients admitted for diabetic ketoacidosis (DKA) or hyperosmolar hyperglycemic state (HHS), patients with an insulin pump, those requiring a continuous insulin infusion, and pregnancy. Pre-education data was collected and analyzed in June 2024 and post-education data was collected and analyzed in October 2024. Information collected on the selected patients included demographics, length of stay, ordering physician, blood glucose levels, hypoglycemia events, A1c, insulin regimens while hospitalized, and any other oral anti-diabetic medications used.

Results: After randomization, a total of 40 pre-implementation patients and 75 post-implementation patients were reviewed and included. For the pre-implementation group, the average length of stay was 14.01 days, 25% experienced a hypoglycemia event, and the average blood glucose was 189.7 mg/dL. The average starting dose for insulin glargine was 10 units per day. The amount of time blood glucose levels were >200 mg/dL was 39.8%. For the post-implementation group, the average length of stay was 17.03 days, 36% experienced a hypoglycemia event, and the average blood glucose was 176.2 mg/dL. The amount of time blood glucose levels were >200 mg/dL was 28.9%. The average starting dose for insulin glargine was 17 units per day. All patients had a sliding scale insulin order besides one patient in the post-implementation group. The most common sliding scale order was written for level 1.

Conclusion: The post-implementation group demonstrated a reduction in the time blood glucose levels were greater than 200 mg/dL, but higher rates of hypoglycemia were also observed. These effects may have been impacted by differences among the study group numbers and patient demographics. The post-implementation group was observed to receive a higher average starting dose of insulin glargine. Providing guideline-based hyperglycemia education to physicians resulted in improved blood glucose control but did not significantly impact hospital length of stay.

global: Y

10:20am – 10:35am L **Vasopressor-Sparing Effects of Methylene Blue versus Hydroxocobalamin for Vasoplegic Syndrome Post-Cardiac Surgery** Parthenon 2

Moderators: Brook Jacobs
Presenters: Cameron Garramone
Evaluators: Erika Ingram

Title: Vasopressor-Sparing Effects of Methylene Blue versus Hydroxocobalamin for Vasoplegic Syndrome Post-Cardiac Surgery

Authors: Cameron Garramone, Reena Patel, Michael Byers, Deidra Garrett

Objective: Compare vasopressor-sparing effects calculated using the vasoactive-inotropic score (VIS) after the administration of methylene blue or hydroxocobalamin for vasoplegic syndrome (VS) post-cardiac surgery.

Self-Assessment Question: What is the difference between methylene blue and hydroxocobalamin in vasopressor-sparing effects for vasoplegic syndrome post-cardiac surgery?

Background: VS is a life-threatening condition that occurs in 5% to 25% of patients undergoing cardiac surgery using cardiopulmonary bypass (CBP) with a mortality rate as high as 25%. The mainstay of managing VS is catecholamine vasopressors, such as epinephrine and norepinephrine. For VS refractory to vasopressors, second-line therapies such as methylene blue and hydroxocobalamin play a key role in its management. Several studies evaluated the use of these therapies and showed a significant decrease in vasopressor requirements and improvement in hemodynamic parameters. At Piedmont Atlanta Hospital, methylene blue is the initial choice for treating refractory VS unless contraindications, such as concomitant use of serotonergic drugs or those with glucose-6-phoshate dehydrogenase (G6PD) deficiency, are present. The VIS calculation, a commonly used tool in research settings, was utilized to objectively quantify the degree of vasopressor support required to maintain hemodynamic stability. Further research is warranted given the lack of direct comparator studies for treating VS using this scoring tool.

Methodology: This was a retrospective chart review of adult patients who underwent cardiac surgery and received either methylene blue or hydroxocobalamin for the treatment of VS between January 2022 and August 2024. Types of cardiac surgery included coronary artery bypass graft, heart valve procedures, left ventricular assist device implant, and heart transplantation. Patients were excluded if interventions were administered > 24 hours post-cardiac surgery, supported on extracorporeal membrane oxygenation (ECMO) prior to surgery, or received tocilizumab intraoperatively. The primary outcome was percent change in VIS from baseline to 24 hours after methylene blue or hydroxocobalamin administration. Secondary outcomes included percent change in VIS from baseline to each timepoint (1, 2, 6, and 12 hours), percent change in mean arterial pressure (MAP) from baseline to 24 hours, need for additional VS treatment (methylene blue or hydroxocobalamin [if not used initially] and angiotensin II), need for ECMO 24 hours post-cardiac surgery, and number of vasopressors discontinued at 6 hours. Clinical outcomes included length of stay from time of procedure and hospital mortality at 24 hours. Statistical analysis was completed using Wilcoxon Rank Sum or independent t-test and chi-square or Fischer’s exact test where appropriate. A p-value of < 0.05 was considered statistically significant.

Results: In the assessed cohort, 35 patients from each group were included for analysis. When comparing methylene blue to hydroxocobalamin, there was a statistically significant difference noted in the primary outcome of percent change in VIS from baseline to 24 hours (-46.4% vs -64.8%; p=0.027), and percent change in MAP from baseline to 24 hours (12.3% vs 22.2%; p=0.012). No statistical significance was found in need for additional VS treatment (40% vs 25.7%; p=0.203), need for ECMO 24 hours post-cardiac surgery (5.7% vs 11.3%; p=0.238), or number of vasopressors discontinued at 6 hours (22.9% vs 22.9%; p=1). The use of hydroxocobalamin had a numerically higher incidence of 2 or more vasopressors being discontinued at 6 hours (37.5% vs 75%; p=0.137), but not statistically significant. There was a statistically significant difference for percent change in VIS from baseline to 12 hours (-29.4% vs -51.9%; p=0.04), but not at 1 hour (-2% vs -13.6%; p=0.153), 2 hours (-7.3% vs -22.6%; p=0.061), or 6 hours (-22.8% vs -28%; p=0.401).

Conclusions: There was a statistically significant difference noted in the primary outcome as well as the secondary outcomes of percent change in VIS from baseline to 12 hours and percent change in MAP from baseline to 24 hours. However, there were no major differences noted in any other secondary outcomes or clinical outcomes. Study limitations included the retrospective design, small patient population, and non-standardized vasopressor weaning protocol. Prospective trials with a larger sample size are warranted in this population.

global: Y

10:20am – 10:35am O **Assessment of Infusion Reaction Rates with Day 1 administration vs Day 5 Administration of Rituximab or biosimilars in Dose-adjusted R-EPOCH** Olympia 2

Moderators: Schylar Cheyenne Hathaway
Presenters: Xiaoshan Chai
Evaluators: Lacey Ioppolo

Title: Assessment of Infusion Reaction Rates with Day 1 administration vs Day 5 Administration of Rituximab or biosimilars in Dose-adjusted R-EPOCH

Authors: Xiaoshan Chai, Elena Cukurs, Chynna Bambico, Sarah Gifford

Background

Infusion-related reactions (IRRs) are a significant concern with rituximab, especially when combined with cytotoxic chemotherapy, such as EPOCH (etoposide, prednisone, vincristine, cyclophosphamide, and doxorubicin) for treating B-cell non-Hodgkin lymphomas. Rituximab, a monoclonal antibody targeting CD20 on B-cells, is known to elicit IRRs, including symptoms like fever, chills, and hypotension, particularly during the first infusion. Factors that increase the chance of developing IRRs include bulky disease with high tumor burden, increased cytokine release, and bone marrow involvement. The administration of rituximab for aggressive lymphomas with higher tumor burden further increases the risk of IRRs, necessitating vigilant supportive care to mitigate these reactions effectively. Management strategies involve premedication, titration of infusion rates, and monitoring. One approach to mitigate IRRs is by administering EPOCH first to debulk the tumor mass prior to introducing rituximab. This study conducted a retrospective chart review to compare the incidences of infusion reactions in B-cell lymphomas patients who received rituximab on either day 1 (D1) or day 5 (D5) of R-EPOCH from 2022 to 2024.

Methods

A retrospective chart review was conducted on patients over the age of 18 who had not previously received anti-CD20 monoclonal antibodies and had completed at least one cycle of R-EPOCH. Patient records were obtained from the electronic health records (EHR) systems of the oncology departments across sites at AdventHealth Central Florida Division. The primary outcome measured was the incidence of IRRs. Secondary outcomes included incidences of tumor lysis syndrome, types of IRRs, the maximum rate of rituximab infusion achieved, and the average time from the start of infusion to the onset of reactions.

Results

A total of eighty-three patients were included in the IRB-approved study, with 63 qualifying for primary analysis (11 in the D5 group and 52 in the D1 group). The primary endpoint revealed an incidence of IRR of 27.3% (3/11) in the D5 group and 30.8% (16/52) in the D1 group (P = 1). The most common type of infusion related reaction was hypotension in both groups. The median maximum infusion rate was 75 mL/hr in the D5 group and 100 mL/hr in the D1 group. The median time from infusion to the occurrence of IRRs was 110 minutes in the D5 group compared to 75 minutes in the D1 group.

Conclusion

We observed a similar rate of infusion-related reactions between groups. Further analysis will be necessary to confirm these findings and inform the optimal scheduling of rituximab administration within the R-EPOCH regimen.

Assessment Question

Based on the study's findings, which of the following statements best describes the impact of administering rituximab on Day 5 (D5) versus Day 1 (D1) in the R-EPOCH regimen regarding infusion-related reactions (IRRs)?

A. Patients in the D5 group experienced significantly fewer IRRs compared to the D1 group.
B. The incidence of IRRs was similar between the D1 and D5 groups
C. Rituximab infusion rates were lower in the D1 group compared to the D5 group, proving that early administration improves infusion tolerance

D. D1 rituximab administration resulted in less severe IRRs

global: Y

10:20am – 10:35am D **Utility of Clonidine Conversion to Prevent Dexmedetomidine Withdrawal Syndrome in Pediatric Patients** Athena J

Moderators: Candace Nichols
Presenters: Emily Hardy

TITLE: Utility of Clonidine Conversion to Prevent Dexmedetomidine Withdrawal Syndrome in Pediatric Patients

AUTHORS: Emily Hardy, Andrea Gerwin, Renee Hughes, Paige Klingborg

BACKGROUND: In 2022, the Society of Critical Care Medicine (SCCM) issued a guideline recommending alpha-2 receptor agonists as the preferred class for sedation in critically ill pediatric patients. Amidst emerging concern regarding potential dexmedetomidine withdrawal in this population, recent evidence has supported the use of clonidine, another alpha-2 agonist, as a bridging agent to mitigate or prevent withdrawal. While some institutions may have implemented the use of clonidine in dexmedetomidine weaning, there is no consensus or validated protocol. This study aimed to examine the relationship between cumulative dexmedetomidine exposure and clonidine requirements and will expand upon a previous analysis at the study site that focused on a period prior to the SCCM guideline update.

METHODS: This IRB-approved, single center, retrospective observational study focused on patients admitted to the PICU from January 2018 to May 2024. Inclusion criteria included receipt of a continuous dexmedetomidine infusion > 24 hours and enteral clonidine for treatment or prevention of dexmedetomidine withdrawal. Patients were excluded if they used clonidine prior to admission or if clonidine was initiated for an alternate indication. Included patients were divided into two groups – a non-escalation and an escalation group – based on whether the patient received an increase in their clonidine dose (at provider discretion). The primary outcome assessed the relationship between cumulative dexmedetomidine exposure and maximum required clonidine dose. Secondary outcomes included dexmedetomidine withdrawal assessment, rate of clonidine failure following initial clonidine dose, hospital and ICU length of stay, ventilator days, central line days, and incidence of tracheostomy placement.

RESULTS: Compared to the non-escalation group, the escalation group had a statistically significant increase in duration of dexmedetomidine (346.4 vs 284.3, p-value=0.0114) and increased cumulative dexmedetomidine dose (341.2 vs 230.8, p-value=0.0128). The difference in initial clonidine dose was not significant (5.7 vs 4.9, p-value=0.7928). The escalation group had a statistically significant increase in hospital LOS (36 vs 27.5, p-value=0.0355) and ICU LOS (27 vs 20.5, p-value=0.0426). There was no statistically significant difference in ventilator days, CVL days, or incidence of tracheostomy.

CONCLUSION: Higher cumulative dexmedetomidine exposure is associated with higher clonidine dose requirements. Both hospital and ICU LOS were significantly decreased in patients who did not require an increase in their clonidine dose. Utilizing cumulative dexmedetomidine exposure to determine initial clonidine dose may be beneficial.

global: Y

10:40am – 10:55am A **Evaluation of Blood Glucose Goal of 110-150 mg/dL in Cardiovascular Intensive Care Patients**

Olympia 1

Moderators: Stephanie Smith

Presenters: Joy Dahlen

Evaluators: Drew Kessell

Title: Evaluation of Blood Glucose Goal of 110-150 mg/dL in Cardiovascular Intensive Care Patients

Authors: Joy Dahlen, Jessica Odom, Carly Sisk, Benjamin Gustafson, Alex Ewing, Lyndsay Gormley

Objective: To determine if a target blood glucose range of 110-150 mg/dL after cardiac surgery resulted in a difference in hypoglycemia incidence compared to previous goal ranges

Background: Hyperglycemia is common in patients, with and without diabetes, who have undergone cardiac surgeries such as coronary artery bypass grafting (CABG) and is associated with many adverse outcomes including increased risk of infection, longer hospital length of stay, and increased risk of mortality. Avoiding hyperglycemia after cardiac surgery mitigates these complications. However, there is controversy over the ideal goal blood glucose range for patients after cardiac surgery.

Methods: This multi-center, pre- and post-interventional, retrospective cohort study evaluated patients undergoing cardiac surgery utilizing the new Prisma Health cardiac insulin drip with a goal blood glucose of 110-150 mg/dL (moderate) compared to previous goals of 100-140 mg/dL (low) or 120-160 mg/dL (high). Patients were identified based on a surgical report for all cardiac surgeries and then randomized to include a total of 200 patients, divided into four groups of 50 (two pre-intervention and two post-intervention groups from two institutions. Patients were included in the study if aged 18 years or older, underwent cardiac surgery, and received an insulin drip. Patients were excluded from the study if they were placed on extracorporeal membrane oxygenation (ECMO), died in the operating room, or had an open chest post-surgery. The primary outcome was incidence of hypoglycemic events (<70 mg/dL) per 1000 ICU days. Secondary outcomes included: incidence of severe hypo- and hyperglycemic events per 1000 ICU days, incidence of sternal wound infection and positive blood cultures, and 30-day mortality.

Results: A total of 200 patients were screened for inclusion, and 182 patients were included in the study. The primary outcome of incidence of hypoglycemia <70 mg/dL was significantly lower between pre- and post-intervention group for Site A, increasing the goal from low 100-140 mg/dL to moderate 110-150 mg/dL (317.46 events per 1000 ICU days in the pre-group vs. 138.25 in the post-group, p=0.0006). There was not a significant difference in hypoglycemic events in the pre- and post-intervention groups for Site B, decreasing the goal from high 120-160 mg/dL to moderate 110-150 mg/dL (13.47 events per 1000 ICU days in the pre-group vs. 20 events per 1000 ICU days in the post-group, p=0.56). There were no significant increases in incidence of sternal wound infection, positive blood cultures, or morality from the moderate goal.

Conclusions: A blood glucose goal of 110-150 mg/dL resulted in significantly lower incidence of hypoglycemic events (<70 mg/dL) compared to a blood glucose goal of 100-140 mg/dL. A blood glucose goal of 110-150 mg/dL did not significantly increase incidence of hypoglycemic events compared to a goal of 120-160 mg/dL.

Self-assessment question: Which of the following post-operative goal glucose ranges had the highest incidence of hypoglycemia?

global: Y

10:40am – 10:55am B **A Dose of Change: Advancing Buprenorphine Induction Practices in the ED** Athena C

Moderators: Devin Lavender

Presenters: Samantha Keen

Evaluators: Crystal Wright

Title: A Dose of Change: Advancing Buprenorphine Induction Practices in the ED

Authors: Samantha Keen, Rebecca Maloney

Objective: Final pending

Self Assessment Question: Final pending

Background:

Opioid use disorder (OUD) continues to be one of the most pressing public health crises in the United States, claiming thousands of lives each year through overdose and contributing to a wide range of social, health, and economic burdens. Emergency departments (EDs) often serve as critical initial points of care for veterans in acute opioid-related crises, yet many leave without access to evidence-based treatment. This initiative aims to improve care quality by implementing standardized buprenorphine induction protocols in the ED, focusing on reducing barriers to treatment initiation and facilitating transitions to outpatient care. Despite the strong evidence and growing support for buprenorphine induction in the ED, our facility does not currently offer this service to veterans presenting with OUD. This gap in care is significant, as veterans who come to the ED for issues related to opioid use often leave without being connected to ongoing treatment, leading to continued cycles of misuse and repeated ED visits. Implementing standard buprenorphine induction protocols in the ED would help bridge this gap, providing veterans with immediate access to life-saving treatment and significantly improving their chances of long-term recovery. By addressing logistical challenges, enhancing care coordination, and fostering staff engagement, the project seeks to improve patient outcomes, reduce ED recidivism, and promote continuity of care for veterans with OUD.

Methods:

This prospective interventional cohort study will be conducted in the emergency department at the James H Quillen VA Medical Center. The study will consist of two phases: a baseline period (pre-implementation) and an intervention period (post-implementation). During the baseline period, data will be collected retrospectively on patients presenting with OUD to the ED and treated with standard care. During the intervention period, a buprenorphine induction protocol with an order set will be implemented. Education on appropriate use of the protocol will be provided to the ED mental health providers. This intervention will be implemented as part of standard of care treatment for this quality improvement project. Following implementation and education, this intervention will be considered standard of care for management of OUD in the ED. Data collection for both phases will include the number of patients screened, buprenorphine inductions performed, and rates of successful outpatient referrals. Following evaluation of the data collected, continuous monitoring of outcomes and quality metrics will occur. Outcomes measured will be the number of patients who receive a buprenorphine prescription through the ED and referrals the SUD clinic.

Results: In progress

Conclusions: In progress

global: Y

10:40am – 10:55am B **Analyzing the implementation of a remote, pharmacist-managed hypertension clinic for veterans** Athena D

Moderators: Ashley Woodhouse
Presenters: Carlos Salgado
Evaluators: Anne Warren

PURPOSE**:**
Recognizing that veterans have a higher prevalence of cardiovascular disease (CVD) and CVD-related mortality than the general population, there is a need to manage risk factors, including blood pressure. Over 70% of patients within the Veterans Affairs healthcare system have hypertension (HTN), but less than 33% have controlled blood pressure. To address the issue of uncontrolled blood pressure and reduce CVD risk, a remote, population health-based, pharmacist-managed quality improvement HTN management service was implemented at a rural Veterans Affairs clinic. This project aims to evaluate the implementation of the service.

METHODS:
This retrospective study evaluated the implementation of the pharmacist-managed HTN clinic using the RE-AIM implementation science framework, a five-domain model designed to assess the impact and implementation of health interventions. The domains of reach, effectiveness, and implementation were evaluated. Reach outcomes included the demographics of veterans who participated in the clinic. Effectiveness outcomes were collected at three months and the most recent visit. Outcomes included changes in baseline blood pressure and home monitoring, the percentage of veterans whose blood pressure was controlled, and the number and types of interventions completed. Implementation outcomes include the average number of patient visits, percentage of eligible patients completing at least one visit, average number of completed visits, number of unsuccessful visit attempts, percentage of calls successfully completed, and number and types of barriers to blood pressure management.

RESULTS:
In progress

CONCLUSION:
In progress

10:40am – 10:55am C **Evaluation of a heparin calculator best practice alert (BPA) implementation at a multi-hospital health system** Athena B

Presenters: Brittaney-Ann Simpson

Evaluators: Laura Schalliol, Avery Shawen

Title: Evaluation of a heparin calculator best practice alert (BPA) implementation at a multi-hospital health system

Authors: Brittaney-Ann Simpson, Kirsten DiPiro, Ambra Hannah, Jerri Jenkins

Objective: Describe the use of a heparin infusion calculator dose mismatch Best Practice Alert (BPA) within a health system

Self Assessment Question:

Background: The electronic heparin calculator has demonstrated benefits in reducing medication errors by minimizing manual calculations in the hospital setting. At Wellstar Health System, heparin infusion initiation and maintenance follow a nurse-driven protocol. This study evaluated the effectiveness of the heparin infusion calculator dose mismatch Best Practice Alert (BPA) in improving adherence to the heparin calculator and its impact on correct dosing and therapeutic efficacy.

Methods: A multicenter retrospective chart review was conducted analyzing adult patients who received a heparin infusion 90 days before BPA implementation (May 24, 2023 to August 22, 2023) and 90 days after (October 1, 2023 to December 30, 2023). Patients were included if they exceeded the maximum starting dose requiring a weight-based heparin infusion adjustment (weight >83.3 kg on low/neuro dose heparin and >125 kg on high dose heparin). Patients were excluded if the heparin infusion was initiated in a procedural area, ordered outside of the heparin order sets, restarted after interruption, or continued on Xa monitoring after receiving a direct oral anticoagulant within 72 hours of heparin initiation. Additionally, patients were excluded from therapeutic efficacy calculations and safety measures if the heparin infusion was less than 24 hours. The primary outcome was to evaluate the impact of the BPA on adherence to heparin calculator weight-based dosing on initiation of a heparin infusion. The secondary outcome evaluated the time to therapeutic heparin levels while safety outcomes assessed major and minor bleeding events.

Results: A total of 212 patients were included in each study arm. Between both study groups, the majority of patients received low-dose heparin (82%), with acute coronary syndromes being the most common indication (41.7%). The BPA was triggered 33 times in the post-implementation cohort, with an acceptance rate of 84.8% (28 cases). Incorrect initial heparin rates were significantly lower in the post-BPA group at 2.5% (n=5) compared to 6.8% (n=13) in the pre-BPA group (P=0.008). For secondary outcomes, the mean time to achieve the second therapeutic level was similar between groups (27 hours; P=0.53). There was no statistically significant difference in major and minor bleeding events (P=1.0 and P=0.49, respectively).

Conclusions: Implementation of the heparin calculator BPA was associated with improved compliance with starting the correct infusion rate for patients that exceeded the max rate based on weight. No correlation was observed between heparin calculator compliance and the time to therapeutic levels or bleeding events. Further studies are needed to assess the BPA's impact on heparin infusion rate adjustments over time.

global: Y

10:40am – 10:55am R **Evaluating the Use of Angiotensin II vs. Methylene Blue in the Management of Refractory Distributive Shock in Patients with Liver Failure** Athena G

Presenters: Kaanan Shah

Evaluators: McKenzie Hodges, Blake Johnson

Title: Evaluating the Use of Angiotensin II vs. Methylene Blue in the Management of Refractory Distributive Shock in Patients with Liver Failure

Authors: Kaanan Shah, Marion Javellana, Peter Moran, Kendall Huntt, Alley Killian

Background: Angiotensin II (AGII) and methylene blue (MB) are agents used in the management of refractory shock as adjunctive agents, typically in combination with catecholamines, vasopressin, and/or corticosteroids. However, many studies have excluded patients with liver failure. In liver failure, patients experience a high cardiac output and low systemic vascular resistance causing hypotension. These agents are thought to be beneficial in this setting as AGII activates angiotensin type 1 receptors thus increasing blood pressure and systemic vascular resistance and MB disrupts the cGMP signaling pathway leading to vasoconstriction. The purpose of this study is to compare the efficacy of AGII and MB in refractory shock in patients with liver failure.

Methods: The institutional review board approved this single center, retrospective chart review study. Patients over the age of 18 that received AGII for at least 3 hours or a bolus dose of at least 1 mg/kg and/or a continuous infusion of MB between October 1, 2022 through September 16, 2024 were included. Patients were excluded if they had no documented liver failure, were pregnant, had active internal bleeding or cardiogenic shock, received intraoperative administration of the study agents or MB as an antidote. The primary outcome is the improvement of shock defined as a percent decrease in catecholamine and vasopressin requirement 3 hours after administration of the study agent based on norepinephrine equivalence. Secondary outcomes include percent decrease in catecholamine and vasopressin requirements at the 1-, 8-, and 24-hour marks post-initiation of the study agents, liberation from vasopressors, adverse events, length of ICU stay, and incidence of ICU mortality. Data from the primary and secondary outcomes were analyzed using intention-to-treat and continuous data was compared using the student t-test or Mann-Whitney U test to determine statistical significance.

Results: Twenty-four patients were included, with five patients in the AGII group and 19 patients in the MB group. Vasopressor requirements decreased at the 3-hour mark after MB but increased after AGII, though not a statistically significant difference (-11.7 vs. +11.3; p = 0.783). Only 18 patients in the MB group and 4 patients in the AGII group survived to the 8-hour mark and there was an increase in NE equivalence with both MB and AGII (+ 9.9 vs. + 38.3; p = 0.731). Additionally, only 15 patients in the MB group and 3 patients in the AGII group survived to the 24-hour mark and patients in the MB group saw a decrease in NE equivalence while patients in the AGII group saw an increase (-15.1 vs. +71.8; p = 0.331). Mortality in the 94.7% in the MB group and 80% in the AGII group. One patient in each group was successfully liberated from vasopressors.

Conclusions: AGII and MB are agents used to treat refractory shock. This study demonstrated MB's potential benefit, compared to AGII, in managing shock in patients with liver failure with an initial reduction in vasopressor requirements. The lack of sustained response to the study agents could potentially be explained by the severity of hepatic dysfunction and associated vasodilatory shock. The two patients who were liberated from vasopressors received liver transplants. Limitations of this study include a small and unequal patient population, the retrospective, single-center nature of the study, and its local applicability. This highlights a need for further research on these agents in the management of shock in patients with liver failure in order to find a beneficial place in therapy for them.

global: Y

10:40am – 10:55am R **Incidence and outcomes of positive urine drug screen in neurocritical care** Athena I

Moderators: Anne-Kathryn Priest
Presenters: Siavash Panahi, Siavash Panahi
Evaluators: Robin Fischer

Title: Incidence and outcomes of positive urine drug screen in neurocritical care

Authors: Siavash Panahi, Morgan Daniel, Sam Pournezhad, Katleen Chester

Objective: To assess the incidence and clinical outcomes associated with positive UDS results in patients admitted to the neurocritical care unit (NCCU) of a large, urban, academic medical center.

Self Assessment Question: Is the incidence higher or lower than Medical and Surgical ICU?

Background: Substance use disorder (SUD) remains a major public health concern, affecting approximately 20.4 million individuals in the United States. Various substances, including amphetamines (AMP), fentanyl, opiates, cannabinoids (CBD), cocaine, benzodiazepines (BZDs), barbiturates (BAR), and methadone, exert significant effects on the central nervous system. Urine drug screening (UDS) is commonly used in hospitalized patients to detect these substances or their metabolites. While previous studies have evaluated the impact of positive UDS results in medical and surgical intensive care units (ICUs), limited data exist on the influence of positive UDS findings on neurocritical care unit (NCCU) admissions and patient outcomes. The objective of this study is to assess the incidence and clinical outcomes associated with positive UDS results in patients admitted to the NCCU of a large, urban, academic medical center.

Methods: This retrospective review analyzed NCCU admissions at Grady Memorial Hospital from January 2016 to December 2023. The study included all NCCU patients with at least one UDS result, considering only the first UDS per encounter. Patients were excluded if they received any dose of the listed substances after hospital arrival and before UDS sample collection. The primary outcome was the incidence of positive UDS results. Secondary outcomes included hospital length of stay (LOS), ICU LOS, the incidence of positive results for each substance, prevalence of single-substance versus multi-substance use, opioid exposure via morphine milligram equivalents (MME), and mortality rates.

Results: Among the 2,430 NCCU encounters, 46% (n = 1,116) were associated with a positive UDS result. Of these, 70% (n = 779) were positive for a single substance, while 30% (n = 367) indicated multi-substance use. The most frequently detected substances were BZDs (19.5%), fentanyl (13.5%), and cannabinoids (11.9%). Patients with positive UDS results had a significantly higher median hospital LOS (7 days [IQR: 3–16] vs. 6 days [IQR: 3–14], $p = 0.003$), while ICU LOS was slightly longer but not statistically significant (3.3 days [IQR: 1.6–7.9] vs. 2.9 days [IQR: 1.5–6.9], $p = 0.09$). Patients with positive UDS results demonstrated significantly higher opioid exposure during admission, with median MME levels of 378.75 (IQR: 59–2250) compared to 120.75 (IQR: 18–1098) in UDS-negative patients ($p < 0.001$). Substances associated with significantly higher MME included amphetamines, barbiturates, BZDs, cannabinoids, methadone, and opiates ($p < 0.05$ for all), whereas cocaine and fentanyl did not show statistically significant differences. Overall mortality did not significantly differ between UDS-positive and UDS-negative patients (21.2% vs. 19.9%, $p = 0.46$). However, subgroup analysis revealed significantly higher mortality rates among patients testing positive for cocaine (26.9%, $p = 0.044$) and BZDs (28.6%, $p = 0.00013$), while other substances did not show statistically significant differences.

Conclusion: This study highlights a high prevalence of substance use among NCCU patients, with BZDs, fentanyl, and CBD being the most frequently detected substances. Positive UDS results were associated with prolonged hospital LOS and higher opioid exposure. Additionally, patients testing positive for cocaine and BZDs exhibited significantly higher mortality rates, underscoring the need for targeted interventions in this population. These findings emphasize the impact of substance use on neurocritical care outcomes and the importance of optimizing management strategies for affected patient.

global: Y

10:40am – 10:55am R **Valproic Acid Augmentation in Traumatic Brain Injury Related Agitation** Athena H

Moderators: Maggie Goode
Presenters: Michelle Allsup
Evaluators: Madeline Motes

1. Title: Valproic Acid Augmentation in Traumatic Brain Injury Related Agitation
2. Authors: Michelle Allsup, Peterson Worrell
3. Background: Traumatic brain injuries (TBIs) are a prevalent issue with many patients experiencing cognitive/behavioral symptoms such as agitation, impulsiveness, and irritability. TBIs were defined as subdural hematoma, subarachnoid hematoma, skull fractures, and cerebral contusion given that it was caused by a traumatic event, such as a fall or motor vehicular collision. The purpose of this study is to identify if valproic acid (VPA) augmentation has a significant difference in these patients' agitation.
4. Methods: This retrospective, observational, cohort study included adult trauma patients admitted to the hospital diagnosed with TBI, and initiated on of VPA and/or quetiapine for agitation. Patients were excluded if they pregnant, incarcerated, and taking any of the following prior to admission – antipsychotics, mood stabilizers, or VPA. These patients were individually chart reviewed from July 31, 2024 to January 31, 2025. The primary outcome was the time to documented resolution, in days, of agitation and the length of time until dose reductions occurred. The secondary outcomes are the incidence of adverse drug reactions (ADR) and the incidence of valproic acid discontinuation due to an ADR or persistent ADRs. As needed medications were also evaluated prior to VPA initiation and after VPA initiation.
5. Results: A total of 8 patients were included in this IRB-approved study. The included patients were then split amongst themselves to examine the before VPA initiation and after VPA initiation. The primary outcome of time to documented resolution of agitation in the pre-VPA time period was a median of 0 days and in the post-VPA time period was 1.5 days. The length of time until dose reductions occurred in the pre-VPA time period was 0 days with quetiapine and in the post-VPA time period was 3.5 days with quetiapine and 0 days with VPA. There were no documented adverse events and no discontinuations due to ADRs. There was a total of 36 doses of as needed medications (haloperidol or lorazepam) given 72 hours prior to VPA initiation and a total of 20 doses of as needed medications given 72 hours after VPA initiation.
6. Conclusion: We observed that VPA may reduce agitation in patients post-TBI whose agitation was not controlled on quetiapine alone. We found that there were more frequent dose reductions of quetiapine on discharge. There was less use of as needed medications after VPA initiation than prior to VPA initiation. A larger sample size is needed to determine if valproic acid decreases agitation in TBI patients. This should be conducted in a multicenter, prospective, randomized controlled study. This will aid in fully evaluating the benefit of VPA for agitation in patients post-TBI.

Contact: Michelle Allsup at michelle.allsup@hcahealthcare.com with any questions.

global: Y

10:40am – 10:55am | **Real World Comparison of Intravenous versus Oral Antimicrobial Therapy for Bone and Joint Infections** Athena A

Moderators: Brian Knott
Presenters: Maura Kreiser
Evaluators: Cameron Lanier

Title: Real World Comparison of Intravenous versus Oral Antimicrobial Therapy for Bone and Joint Infections

Authors: Maura Kreiser, Sarah Al Mansi, Ismael Yunusa, Caroline Derrick, P. Brandon Bookstaver, Majdi N. Al-Hasan, Yorika Hammett, Morgan Pizzuti

Background: Outpatient Parenteral Antimicrobial Therapy (OPAT) has expanded significantly over the past few decades, driven by its clinical efficacy and cost-effectiveness. A landmark study in this field, the OVIVA trial (Oral versus Intravenous Antibiotics for Bone and Joint Infection), demonstrated the non-inferiority of oral antimicrobials compared to intravenous (IV) therapy for treating bone and joint infections. However, OVIVA was conducted before the widespread use of certain long-acting injectables or highly bioavailable antimicrobials, such as dalbavancin and linezolid, respectively, which are now commonly used for prolonged treatment durations. Since OVIVA, there has been increased comfort with prescribing oral antimicrobials for bone and joint infections, yet real-world prescribing patterns and outcomes remain understudied. This study aims to evaluate local, real-world use of IV versus oral antimicrobials in bone and joint infections and assess treatment and logistic failure rates.

Methods: This retrospective cohort study included adult patients with a bone and/or joint infection admitted to and discharged from one of four study locations. Patients were eligible if they had an infectious diseases consultation between January 2023 and August 2024 that outlined at least 4 weeks of planned antimicrobial therapy. The primary outcome was treatment failure within one year of active antimicrobial treatment, defined as provider-determined treatment failure, microbiologic recurrence, hospital readmission, radiologic or operative evidence of persistent or worsening infection, mortality, or antimicrobial changes due to adverse events or intolerance. Secondary outcomes included logistic failure rates and risk factors for treatment and logistic failure. The primary outcome was assessed using Cox regression, while secondary outcomes were analyzed using both descriptive statistics and logistic regression.

Results: In Progress

Conclusions: In Progress

global: Y

10:40am – 10:55am F **Transitioning RFID Medication Tray Solutions: A Nine-Hospital Network Implementation** Athena J

Moderators: Candace Nichols

Presenters: Nina Desai

Title: Transitioning RFID Medication Tray Solutions: A Nine-Hospital Network Implementation

Authors: Nina Desai, PharmD.; Hiren Shah, PharmD., BCPS; Craig MacDonald, PharmD.

Objective: To address the conversion between RFID systems and the challenges that arise during this process.

Self Assessment Question: True or False. Vendors will always be able to transfer currently tagged products to a new system during a vendor conversion.

Background:

RFID (radio-frequency identification) in pharmacy enhances the accuracy and efficiency of medication management. By tagging medications with RFID, pharmacies can automate the tracking process and reduce human error. AdventHealth utilizes RFID technology for code trays and anesthesia station trays. Trays and medications are equipped with RFID tags containing unique identifiers for precise tracking and inventory control. The goal of the system is to monitor tray and medication inventory and notify staff when items are nearing expiration or trays need restocking.

AdventHealth is in the process of transitioning vendors for RFID tray solutions. The key benefit of System B is the ability to purchase pre-tagged items directly from AdventHealth's established wholesaler.

During a brand-new RFID go live a drug library would be built and the items required in the pharmacy would be tagged and entered into the system. With a conversion the existing information and tagged products would ideally be transferable to the new system, removing potential work and redundant inventory. While most published information focuses on implementing new RFID system, this presentation addresses the conversion between RFID systems and the challenges that arise during this process.

Methods:

AdventHealth's Central Florida Division is transitioning from System A to System B in a structured three-phase approach. Each phase includes three hospitals and phase three includes sites using mobile solutions for anesthesia-station trays, including the 1,366-bed flagship hospital. The conversion is led by the pharmacy informatics team, vendor representatives and local pharmacy leadership.

System A was not able to transfer existing drug registry information into System B, requiring a conversion process for existing tagged inventory. The preparation of tagged items for the conversion involved commissioning medications previously tagged in System A, purchasing pre-tagged items from the wholesaler, and newly tagging items by the pharmacy.

An action plan was developed for the six weeks preceding the go-live. The first two weeks were spent gathering and preparing tray, NDC, user, and site data. The next week was dedicated to training users, with each site completing buyer, superuser, and general staff training. The following three weeks focused on commissioning to ensure tagged medication was available during go-live. Additionally, sites were encouraged to purchase additional inventory pre-tagged through the wholesaler associated with System B. The existing tagged inventory was separated by lot and commissioned, with daily tracking of commissioned items.

These commissioning weeks provided enough items to reach the project milestones (three-tiered progression):

1. Completed at least one of each tray template.
2. Completed at least three of each tray template.
3. Completed high-priority trays.

Results:

Phase one was completed in December 2024, and phase two will finish by mid-March 2025. The team initially faced a steep learning curve, including commissioning bottlenecks. During some commissioning steps, we are limited to a single System B kiosk, which caused significant bottlenecks. For reference, a smaller site with nearly 200 beds has an inventory of nearly 3,000 tagged items in System A that needed to be commissioned into system B.

The action plan was adjusted after each go-live, leading to significant improvements in preparation and execution. As the flagship hospital transitions to a mobile solution in phase three, the plan will continue to evolve.

Conclusion: In progress

global: Y

10:40am – 10:55am L **Justification of a Specialty Pharmacy Discharge Medication Reconciliation Program: A Descriptive Study** Parthenon 2

Moderators: Brook Jacobs
Presenters: Caroline Joncas
Evaluators: Erika Ingram

TITLE: Justification of a Specialty Pharmacy Discharge Medication Reconciliation Program: A Descriptive Study

Caroline Joncas, Taylor Wells

BACKGROUND: **Specialty** pharmacies provide medications for patients living complex medical conditions including cancer, Human Immunodeficiency Virus, Multiple Sclerosis, and rheumatology conditions. These medications account for 55% of the United States medication expenditure. While previous literature has established the value of medication reconciliations at time of hospital discharge in patients on chronic medication therapy, minimal literature is available describing the impact on patients receiving medications from specialty pharmacies . The purpose of this study was to retrospectively identify opportunities for pharmacist interventions at time of discharge in patients receiving specialty medications and determine the type, severity, and cost savings associated with these interventions.

METHODS: This single-center retrospective descriptive study included patients with a documented fill history of a specialty medication at Cape Fear Valley Specialty Pharmacy for HIV or an oncologic disease state within 1 month of an inpatient admission between January 2022 and January 2024. Discharge summaries and specialty follow-up visit notes were reviewed for medication discrepancies. The primary endpoint was the number of opportunities for pharmacist intervention and associated cost avoidance, defined as number of errors found and the associated cost based on error severity. A validated scale was used to grade the severity of errors from no error to potentially lethal.

RESULTS: A total of 90 patient encounters met inclusion criteria. Of these encounters, 76 (84%) were associated with cancer, 6 (7%) with HIV, and 8 (9%) with other diagnoses. Overall, 9 (10%) encounters had a medication error at time of hospital discharge. The majority of errors were identified as significant (78%), with one serious error and one potentially lethal error. The most common type of error was inappropriate omission (78%). The cost avoidance associated with these errors was $14,960 over the two-year study period.

CONCLUSION: This study indicates that while some cost savings are possible through targeted medication reconciliations at time of discharge for specialty patients, the overall opportunity is not large enough to justify a medication reconciliation position specific to specialty pharmacy. However, this service would be a beneficial addition into the specialty pharmacy workflow, as there were significant cost savings considering the small number of issues identified by this study.

global: Y

10:40am – 10:55am O **Evaluating Adherence to Eye Care Recommendations Amongst Patients Receiving Antibody Drug Conjugates for Gynecologic Malignancies** Olympia 2

Moderators: Schylar Cheyenne Hathaway
Presenters: Ram Patel
Evaluators: Lacey Ioppolo

Title:
Evaluating Adherence to Eye Care Recommendations Amongst Patients Receiving Antibody Drug Conjugates for Gynecologic Malignancies

Authors:
Ram Patel, PharmD
Kelli McCrum, PharmD
Michael Saxon, PharmD, BCPS

Objectives:

1. Primary Objective: Assess compliance with prescribed eye drops.
2. Secondary Objectives:
    1. Identify correlations between adherence and ocular toxicity.
    2. Evaluate the effectiveness of patient education in mitigating adverse effects.

Self Assessment Questions:
How does adherence to eye care measures correlate with the incidence of ocular toxicity? What factors influence patient adherence to prophylactic eye drop regimens?

Background:
Antibody-drug conjugates (ADCs) such as mirvetuximab soravtansine and tisotumab vedotin have demonstrated efficacy in treating gynecologic malignancies but are associated with ocular toxicity, necessitating preventive eye care measures. This study aims to evaluate adherence to prophylactic eye drop regimens among patients receiving these therapies. The primary objective is to assess compliance with prescribed eye drops, while secondary objectives include identifying correlations between adherence and ocular toxicity and evaluating the effectiveness of patient education in mitigating adverse effects.

Methods:
A cross-sectional, prospective study was conducted to assess adherence to prophylactic eye drops in patients receiving mirvetuximab soravtansine or tisotumab vedotin. Eligible patients completed a structured questionnaire evaluating adherence to steroid, lubricating, and vasoconstrictor eye drops (for tisotumab patients only). Inclusion criteria consisted of patients actively receiving ADC therapy, those prescribed prophylactic eye drops, and English-speaking patients. Data collection included duration of eye drop prophylaxis, frequency, dosage, and adherence, measured via a Likert scale. Patients also assessed their understanding of eye care importance and reported any ocular symptoms.

Results:
Preliminary data from four patient encounters indicate adherence to eye drop regimens at 100%, adequate understanding of their regimen at 100%, and minimal ocular toxicities. Reported toxicities include dry eyes being

reported in 100% of patient encounters, blurry vision reported in 25%, and sensitivity to light reported in 25%. Our current hypothesis suggests that higher rates of adherence correlates with a lower incidence of ocular toxicity. With the limited number of patient encounters thus far demonstrating adherence and understanding of their regimens, more data is needed to draw any further conclusions or correlations. This study also examines patient-reported barriers to adherence, such as difficulty remembering doses, perceived ineffectiveness, or discomfort caused by the drops.

Conclusion:
This study provides valuable insights into adherence patterns, ocular toxicity risks, and the effectiveness of patient education in mitigating adverse events. Identifying key adherence barriers and their impact on toxicity rates may inform strategies to improve compliance and patient outcomes. Enhanced adherence to prophylactic eye care measures could reduce treatment-related complications, improving tolerability and quality of life for patients receiving ADC therapy. Ultimately, these findings may contribute to the development of standardized adherence protocols to optimize patient care and minimize ocular toxicity in clinical practice.

global: Y

11:00am – 11:15am	A	**Empty** *Moderators: Stephanie Smith* *Evaluators: Drew Kessell*	Olympia 1

11:00am – 11:15am B **Pharmacist-Led Deprescribing of Inappropriately Prescribed Inhaled Corticosteroids in Veterans with Chronic Obstructive Pulmonary Disease** Athena C

Moderators: Devin Lavender
Presenters: Jessica Parks
Evaluators: Crystal Wright

Title:
Pharmacist-Led Deprescribing of Inappropriately Prescribed Inhaled Corticosteroids in Veterans with Chronic Obstructive Pulmonary Disease

Authors:
Jessica Parks, Amber Jefferson, Lauren Howard, Cassandra Warsaw

Introduction:
Chronic obstructive pulmonary disease (COPD) management consists of bronchodilators and inhaled corticosteroid (ICS). ICS use is recommended with a history of COPD hospitalizations, two or more moderate COPD exacerbation within the last two years, eosinophil (EOS) count of 300 cells/μL or higher, or if the patient is diagnosed with concomitant asthma. ICS should be considered as a last-line option due to increased risk for oral candidiasis, hoarse voice, and pneumonia. Previous studies have shown benefits of pharmacist-led clinics for the management of chronic disease states. The purpose of this quality improvement initiative was to investigate the impact of pharmacist-led deprescribing of inappropriately prescribed inhaled corticosteroids in Veterans with COPD, regardless of initial ICS-containing regimens.

Methods:
Retrospective chart reviews were completed for the initiative. A total of 123 Veterans, identified using the COPD Dashboard, were included in the review. Descriptive statistics were used for data analysis. Veterans were included if assigned to the designated primary care clinic, diagnosed with COPD, and had an active ICS prescription. A total of 54 Veterans met inclusion criteria. Charts were reviewed for an appropriate indication for ICS use. Updated pulmonary function tests (PFTs) and complete blood cell counts (CBC) were scheduled with consent. If the ICS was deemed inappropriate, then the pharmacist contacted the Veteran via telephone to provide education and utilized Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines to determine appropriate therapy. Veterans were contacted via telephone to conduct a COPD management appointment, and based on patient-specific factors, the pharmacist recommended to either discontinue or continue the ICS-containing inhaler. If an ICS was discontinued, a long-acting muscarinic antagonist (LAMA) or LAMA/long-acting bronchodilator agonist (LABA) was prescribed as alternative therapy. Interventions were documented in the electronic health record using a specified note template. Data collection occurred between July and November 2024. The project was approved by the Pharmacy and Therapeutics committee as a quality improvement initiative, which is exempt from IRB approval.

Results:
Upon examination of charts, it was noted that PFT results and CBC lab work were outdated in accordance to GOLD guidelines for COPD therapeutic management. A total of 21 Veterans obtained updated PFTs and 9 Veterans obtained updated CBC

labs. There were a total of 54 Veterans that met inclusion criteria and there were a total of 33 Veterans deemed appropriate for ICS deprescribing. Overall, 76% (N=25) of Veterans agreed to ICS de-escalation.

Conclusions:
The data collected further supports the necessity of pharmacist-led clinics to ensure appropriate medications are prescribed and monitoring parameters are upheld. Additionally, pharmacist-led deprescribing of inappropriate ICS inhalers reduces the risk of adverse effects and enables pharmacists to identify patients requiring updated COPD monitoring.

global: Y

11:00am – 11:15am B **Proper Sodium-Glucose Transport Protein 2 Inhibitor use in New York Heart Association class II-IV heart failure patients** Athena D

Moderators: Ashley Woodhouse

Presenters: Mary Sizer

Evaluators: Anne Warren

Title: Proper Sodium-Glucose Transport Protein 2 Inhibitor use in New York Heart Association class II-IV heart failure patients

Authors:

Primary: Mary Sizer

Secondary: Melissa Johnson, Joseph Crosby, Akshaya Arunkumar, Ashlee Greene

Objective: To determine if HF patients are being prescribed SGLT2 inhibitors more often in collaborative care of a physician and pharmacist versus a physician alone in the primary care setting.

Self-Assessment Question: To be presented with slides

Background:

Sodium-Glucose Transport Protein 2 (SGLT2) inhibitors were recently added to the heart failure guidelines in 2022 and can help prevent heart failure hospitalizations by up to 30%. Being a Class I recommendation for heart failure with reduced ejection fraction and a Class 2a recommendation for preserved ejection fraction, it is crucial that these medications are used correctly in the outpatient setting. Pharmacists are not consulted on all heart failure patients in primary care offices at our health system. Identifying these potential gaps in care would ultimately improve outcomes for patients and help advocate for further pharmacy involvement within primary care offices.

Methods:

This was a multi-center, retrospective study identifying SGLT2 inhibitor use in outpatient heart failure New York Heart Association (NYHA) class II-IV patients at St. Joseph's/Candler primary care clinics from August 1, 2023, to August 1, 2024. Patients were identified through a report capturing heart failure ICD10 codes and reviewed for eligibility. Patients considered for inclusion were at least 18 years old with a diagnosis of heart failure that followed at participating St. Joseph's/Candler affiliated offices. Patients that were on dialysis, had a reported allergy or contraindication for use, or were pregnant/lactating were excluded. Eligible patients were stratified into physician/pharmacist cohort or a physician-only cohort. Medication data was obtained and patients were classified into groups SGLT2 inhibitor use and no use. The primary objective was to determine if heart failure patients are being prescribed SGLT2 inhibitors more often in collaborative care of a physician and pharmacist versus a physician alone in the primary care setting. Secondary objectives included determining if patients were prescribed appropriate heart failure doses, determining if appropriate outpatient use correlates with less hospital admissions, and comparing rates of use in heart failure with reduced ejection fraction (HFrEF) and heart failure with preserved ejection fraction (HFpEF). Data was analyzed to determine any gaps of care or implicating trends at the participating primary care clinics.

Results:

Three hundred forty-eight patients were screened for eligibility with total n of 300. Pharmacy was consulted on 82 of the 300 patients with 30/82 on a SGLT2 inhibitor (36.6%). Of the 30 patients on a SGLT 2 inhibitor in the pharmacist/physician cohort, 28 of them had correct heart failure dosing (93.3%). The remaining 2 patients in the pharmacy cohort had diabetes and were receiving the recommended dose for diabetes. The physician-only cohort (218 patients) was found to have 73 patients on a SGLT2 inhibitor (33.4%). Fifty-one of these patients were found to be on correct heart failure dosing (69.8%) with 10 of the remaining 22 patients with incorrect dosing being due to diabetes (45.4%). Hospital admissions due to heart failure were less prevalent in the pharmacy cohort (31.77% vs 44.0%). The pharmacy/physician cohort had 13 patients with HFrEF, 7 of which were on an SGLT2 inhibitor (53.8%) compared to 26/56 patients in the physician-only cohort. Likewise, 23/69 patients with HFpEF were on an SGLT2 inhibitor in the pharmacy group (33.3%) with 47/162 (29.0%) in the physician-only group.

Conclusions:

Rates of SGLT2 inhibitor use in heart failure patients NYHA class II-IV were overall higher in the pharmacist/physician group, although comparable between the groups. The biggest impact was seen in the heart failure dosing. Pharmacy involvement resulted in appropriate dosing for all patients on a SGLT2 inhibitor. All-cause hospitalizations were similar;

however, hospitalizations due to heart failure saw the largest difference favoring pharmacy involvement. Collaborative care was more likely to prescribe a SGLT2 inhibitor for both heart failure with reduced and preserved ejection fraction.

global: Y

11:00am – 11:15am C **Injectable Glucagon-Like Peptide-1 Receptor Agonists and Cardiovascular Outcomes in Patients Without Diabetes in Outpatient Cardiology Clinics** Athena B

Presenters: Kristina Benbow

Evaluators: Laura Schalliol, Avery Shawen

Title: Injectable Glucagon-Like Peptide-1 Receptor Agonists and Cardiovascular Outcomes in Patients Without Diabetes in Outpatient Cardiology Clinics

Authors: Kristina Benbow, Madison Burke, Lauren Schultz, Marina Carter, Deborah Hurley, Benjamin Tabor

Background: Glucagon-Like Peptide-1 (GLP-1) receptor agonists have emerged as clinically significant treatment options for type 2 diabetes, obesity, and cardiovascular (CV) risk reduction. To date, Semaglutide and Cardiovascular Outcomes in Obesity without Diabetes (SELECT Trial) is the only trial to comprise of *non-diabetic* patients with preexisting CV disease defined as myocardial infarction, stroke, or symptomatic peripheral artery disease. In this trial, semaglutide was superior to placebo in reducing a CV composite of death from CV causes, nonfatal myocardial infarction, and nonfatal stroke. This study explores an expansion of the inclusion criteria used in the SELECT Trial, using a large outpatient cardiology population.

Methods: This retrospective cohort study includes adult patients prescribed injectable GLP-1 receptor agonists followed by Prisma Health Cardiology between January 2022 and April 2023. Data was collected through April 2024. Patients were assigned to the control group if they never filled the medication with all other patients considered the intervention group. The primary outcome is a composite of death from cardiovascular causes, nonfatal myocardial infarction, and nonfatal stroke. Secondary outcomes include total change in patient health variables (body weight, blood pressure, cholesterol, hemoglobin A1c), hospitalization or urgent medical visit for heart failure, and death from any cause. Descriptive statistics, stratified analyses (control vs intervention group), and multivariable logistic regression will be used to summarize the data and to evaluate the association of GLP-1 use and risk of death and other non-fatal cardiovascular outcomes.

Results: 123 patients without diabetes were prescribed a GLP-1 receptor agonist, 83 received the medication (intervention) and 40 did not (control). The primary endpoint did not differ between study arms, with no occurrences of death from CV cause or nonfatal stroke in either group. There was a nonsignificant trend in the control group for nonfatal MI (n=2 control, n=0 intervention; p=0.104). There were no occurrences of death from any cause and hospitalization or urgent medical visit for heart failure between groups. Secondary outcomes reflected a statistically significant reduction for intervention group in body weight (-1.0 kg control, -8.4 kg intervention; p<0.001), BMI (-0.2 kg/m2 control, -3.2 kg/m2 intervention; p<0.001), LDL (+1.4 mg/dL control, -34.1 mg/dL intervention; p<0.001), systolic blood pressure (+1.4 mmHg control; -7.9 mmHg intervention; p<0.001), and diastolic blood pressure (+1.2 mmHg control; -5.4 mmHg intervention; p=0.003). There was no difference in change in A1c between arms (0.0 ± 0.9 control, 0.0 ± 0.3 intervention; p=0.374).

Conclusions: Although unable to find a statistically significant difference in the composite primary endpoint, secondary cardiovascular outcomes favored the use of GLP-1 receptor agonists in patients without diabetes. There was a statistically significant lowering of known cardiovascular risk factors, including body weight, LDL, and blood pressure. Limitations of this study include a small study size which does not allow for true evaluation of primary endpoint, inclusion of patients irrespective of adherence to the GLP-1 receptor agonist or changes to background medications, and lack of available laboratory data points for many patients (notably, A1c and LDL). Unlike the SELECT Trial which looked exclusively at patients with a past medical history of MI, stroke, or symptomatic peripheral artery disease, this study was able to find CV benefit in a population both without CV history and in patients with coronary artery disease, all who were baseline close to having controlled/goal labs and vitals. Ultimately, this data helps advocate for insurance approval of GLP-1 receptor agonist in patients without diabetes secondary to their CV benefit.

global: Y

11:00am – 11:15am R **Comparison of emergency department weight based levetiracetam dosing in patients with status epilepticus** Athena G

Presenters: Zack Moreo

Evaluators: McKenzie Hodges, Blake Johnson

Title: Comparison of emergency department weight based levetiracetam dosing in patients with status epilepticus

Authors: Zackery Moreo, Kelly Bodine, Olivia Morgan, John Patka

Objective: Evaluate impact of levetiracetam dosing in the ED on need for subsequent antiseizure medications (ASMs)

Self-Assessment Question: What is the optimal dose of levetiracetam in patients with SE?

Background: Status epilepticus (SE) is defined as a seizure with five minutes or more of continuous clinical and/or electrographic seizure activity or recurrent seizure activity without recovery between seizures. SE is a neurological emergency requiring immediate evaluation and management to prevent significant morbidity and mortality. Benzodiazepines are first line treatment for aborting seizure activity; however, in SE seizures may be refractory requiring second line treatment options. Guidelines for SE recommend the use of levetiracetam as a second line agent but, the dosing recommendations for levetiracetam vary. Other available studies have compared the use of levetiracetam at various doses to other antiseizure medications (ASMs), but few have compared the efficacy of different levetiracetam dosing strategies to each other. Due to this and the variation in guideline recommendations, dosing throughout the emergency department (ED) may differ.

Methods: This was a retrospective cohort study of adult patients presenting to the ED with SE and received at least one dose of levetiracetam from January 2023 to December 2023. The primary outcome was percentage of patients requiring subsequent ASM's 6-hours from initial levetiracetam dose. Secondary outcomes included the percentage of patients receiving guideline recommended dose of benzodiazepines, use of institutional order set, escalation of care (ICU admission or intubation). Primary and secondary outcomes were assessed utilizing Chi-Square analysis.

Results: A total of 300 patients were screened, 253 patients met inclusion criteria and were included in the final analysis. There was a total of 145 patients in the levetiracetam ≥ 60 mg/kg group and 108 patients in the levetiracetam < 60 mg/kg group. Patients had median age of 60, majority were male (56.6%) and black (82%). Patients had a mean weight of 73.1 kg (±18.2) in ≥ 60 mg/kg group and 80.1 kg (±22.6) in the < 60 mg/kg group. Ninety-seven patients (66.9%) in the ≥ 60mg/kg group had a history of epilepsy and 96 (66.2%) were prescribed ASM prior to admission, and 62 (57.4

global: Y

11:00am – 11:15am R **Evaluating the Safety and Efficacy of Bicarbonate Use in Moderate-to-Severe Diabetic Ketoacidosis** Athena I

Moderators: Anne-Kathryn Priest
Presenters: John Young
Evaluators: Robin Fischer

Title: Evaluating the Safety and Efficacy of Bicarbonate Use in Moderate-to-Severe Diabetic Ketoacidosis

Authors: John Ethan Young, Ashley Crisler, Bianca Rivera-Ramirez, McKenzie Hodges

Objective: To evaluate the effects of sodium bicarbonate therapy on the resolution of DKA and its associated outcomes

Self-Assessment Question: Which of the following is not characteristic of diabetic ketoacidosis? (A) Hyperglycemia (B) Metabolic alkalosis (C) Ketosis (D) Metabolic acidosis

Background: Diabetic ketoacidosis (DKA) is an acute, life-threatening complication of diabetes characterized by hyperglycemia, metabolic acidosis, and elevated ketone levels. While the mainstays of DKA treatment include insulin therapy, fluid resuscitation, and electrolyte correction, the use of sodium bicarbonate to treat acidosis remains controversial. The American Diabetes Association (ADA) 2024 guidelines recommend considering sodium bicarbonate only in cases of severe acidosis (pH <6.9), but its routine use varies widely across institutions. Preliminary evidence from randomized studies has shown no significant improvement in morbidity or mortality with sodium bicarbonate therapy in DKA patients with pH levels between 6.9 and 7.1. However, there remains a gap in the literature regarding its impact on time to DKA resolution, which this study seeks to address. By clarifying the role of sodium bicarbonate in DKA management, this study aims to provide insight into optimizing treatment strategies and minimizing unnecessary interventions in the care of DKA patients.

Methods: A retrospective chart review was performed on adult patients treated for diabetic ketoacidosis (DKA) at Piedmont Columbus Regional Midtown between January 1, 2023 and December 31, 2023. Patients had to be 18 years of age or older and have clinical evidence of moderate-to-severe DKA. Patients that met these parameters were divided into two groups based on the administration of a sodium bicarbonate infusion. Patients were excluded if they presented with euglycemic DKA or if their insulin infusion was terminated prior to DKA resolution. The primary objective was time to DKA resolution. Secondary objectives included duration of insulin infusion, recurrence of acidosis, incidence of hypokalemia, hospital length of stay, and ICU length of stay. An independent t-test was used for the primary outcome, as well as the secondary outcomes of insulin infusion duration and length of stay, while a Chi Square Test was used to evaluate the recurrence of acidosis and incidence of hypokalemia.

Results: The patients receiving bicarbonate (n=32) had an average time to DKA resolution of 21.9 hours, while the patients receiving the standard of care (n=31) had an average time of 18.4 hours. Additionally, there was no difference seen for the secondary outcomes of insulin infusion duration [23.4 h vs 20.3 h], recurrence of acidosis [15.6% vs 3.2%], incidence of hypokalemia [65.6% vs 51.6%], and ICU length of stay [4.6 d vs 3.3 d]. There was a statistically significant difference for incidence of moderate hypokalemia [28.1% vs 6.5%] and hospital length of stay [10.3 d vs 5.2 d].

Conclusion: This study demonstrates that bicarbonate therapy is not efficacious in the management of DKA and may increase the incidence of moderate hypokalemia, risk of fluid overload, and potentially contribute to longer hospital length of stay. In conclusion, bicarbonate therapy should be seldom used for DKA, and the decision should be made by weighing the risks and benefits.

global: Y

11:00am – 11:15am R **Evaluation of Appropriateness of Antibiotics Prescribed at ED Discharge for Urinary Tract Infections or Community Acquired Pneumonia in Medicare Patients 65+** Athena H

Moderators: Maggie Goode
Presenters: Gabrielle Hopkins
Evaluators: Madeline Motes

Title: Evaluation of Appropriateness of Antibiotics Prescribed at ED Discharge for Urinary Tract Infections or Community Acquired Pneumonia in Medicare Patients 65+

Authors: Gabrielle Hopkins, Carlen Johnson, Nicole Gonzalez

Background: Antibiotics are some of the most prescribed medications in the Emergency Department. However, providers are often required to prescribe antibiotics prior to definitive culture results. Studies have shown that inappropriate prescribing may lead to patient harm, including adverse events, treatment failure, antimicrobial resistance, and hospital readmission. Community acquired pneumonia (CAP) and urinary tract infections (UTI) are among the top discharge diagnoses with the highest 30-day all-cause readmissions. This retrospective study aims to provide insight into ED discharge antibiotic prescribing patterns in Medicare patients 65+ for CAP or UTI at AdventHealth Central Florida Division (CFD) South campuses.

Method: The study was conducted as a retrospective chart review. Reports were populated through the electronic health record identifying Medicare patients 65 years at all AdventHealth CFD South campuses who were discharged from the ED with at least one antibiotic for CAP or UTI during the period of June 1, 2023 to June 30, 2024. Patients who were less than 65 years old, pregnant, incarcerated, discharged from the ED with CAP or UTI with no oral antibiotics, or had missing documentation were excluded from the study. De-identified patient data including demographics, antibiotic agent, antibiotic dose, duration of therapy, antibiotic appropriateness based on culture results, and markers of infection were collected for assessment. The primary outcome of this study was to evaluate the appropriateness of discharge ED antibiotic prescribing for CAP or UTI within the Medicare 65+ population. The antibiotic agent, dose, frequency, duration of therapy, and appropriateness of each agent based on culture results were assessed. The secondary outcome was inappropriate renal dosing associated with discharge antimicrobial treatment. Collected data was analyzed using descriptive statistics.

Results: A total of 158 patients met the inclusion criteria and were included in data analysis. The median age was 78 years, the median weight was 72.5 kg, and the median height was 65 inches. The most common comorbidities included cardiac [131, (82%)], neurological [45,(28%)], and diabetes [38, (24%)]. Fifty-one patients diagnosed with UTI (34%) received ceftriaxone in the emergency department prior to discharge. Upon discharge, the most prevalent antimicrobial agent prescribed for UTI was cephalexin [65,(44%)] and most common organism identified was *Escherichia coli* [30, (18%)]. Cystitis was found to be the most common indication for antimicrobial therapy upon discharge [133 (84%)]. Nine (5.6%) patients were diagnosed with CAP. The most prevalent agent prescribed for CAP upon discharge was azithromycin [5, (55%)] and *Mycoplasma pneumoniae* [1 (11%] was identified to be the most common organism for CAP. The median duration of antimicrobial therapy was 7 days for UTI and 7 days for CAP. Further analysis revealed drug-bug mismatch in 22 (28%) patients, renal function mismatch in 87 (55%) patients and no microbiologic results in 40 (25%) patients.

Conclusion: Discharge antibiotic prescribing patterns varied amongst each CFD campus for Medicare 65+ patents who were discharged home on antimicrobial therapy for UTI or CAP. Twenty-eight percent (28%) of antibiotics prescribed at discharge did not appropriately treat the culture identified pathogens. Fifty-five percent (55%) of the antibiotics were dosed inappropriately based on renal function. This demonstrates an opportunity for pharmacist involvement to improve future patient care. Future directions include opportunities to improve rates of bug-drug match selection, education and resources for ED providers on proper antibiotic selection. Lastly, standardization of order sets for discharge antibiotics for patients discharged from all CFD EDs may improve appropriate discharge antibiotic prescribing.

Self-Assessment Question: Which was the most common bacteria identified in patients with UTI?

A. *Staphylococcus aureus*

B. *Escherichia coli*

C. *Klebsiella pneumoniae*

D. *Proteus mirabilis*

global: Y

11:00am – 11:15am | **Functional Cure of Hepatitis B Infections Among Patients Co-infected with HIV on Tenofovir-based Antiretroviral Therapy** Athena A

Moderators: Brian Knott
Presenters: Adesuwa Utomwen
Evaluators: Cameron Lanier

Title: Functional Cure of Hepatitis B Infections Among Patients Co-infected with HIV on Tenofovir-based Antiretroviral Therapy

Authors: Adesuwa Utomwen, Emily Steinbock, Minh Pham
Site: Cone Health – Moses H. Cone Memorial Hospital; Greensboro, NC

Objective: Define functional cure of HBV infections and identify the ideal guideline-directed treatment regimen used for HIV and HBV coinfected patients

Background:
Human immunodeficiency virus (HIV) affects approximately 1.2 million people in the United States, and among these patients, it is estimated that 10% are coinfected with chronic hepatitis B viral (HBV) infection. In patients with HBV, functional cure, defined by loss of hepatitis B surface antigen (HBsAg), is rare. Only 2-4% of HBV mono-infected patients receiving treatment achieve functional cure. Some studies have suggested that patients co-infected with HIV and HBV achieve higher rates of functional cure, approximately 7-10%, likely due to lifelong exposure to antiretroviral therapy (ART). ART regimens containing tenofovir are the most widely recommended treatment for HBV co-infected patients. Patients achieving functional cure should be re-vaccinated to help stimulate the production of hepatitis B antibodies (anti-HBs). The primary objective of this study was to determine the incidence rate of functional cure among patients coinfected with HIV/HBV who were taking a tenofovir-based ART regimen.

Methods:
This study was a single-centered, prospective, IRB-approved, interventional study evaluating the incidence of HBsAg loss among HIV/HBV co-infected patients over a 7-month period from August 1, 2024 to February 28, 2025. The study population was identified using a report that included patients with confirmed diagnoses of both HIV and Hepatitis B at the Cone Health Regional Center for Infectious Diseases clinic. Patients were included if they were 18 years of age or older, had confirmed HIV and HBV diagnoses, and were currently receiving care at the RCID clinic. Patients were excluded if they were lost to follow-up at the RCID clinic, diagnosed with hepatitis C viral infection, not receiving treatment with a tenofovir-containing therapy regimen, or were currently involved in another research study. For patients meeting the inclusion criteria, the researcher scheduled HBsAg labs to be collected during patients' future appointments, notified providers of these orders, and determined the need for vaccinations based on the laboratory results. The primary outcome was the incidence of functional cure of hepatitis B. The secondary outcome reviewed lab collection patterns. Subgroup analyses involved a comprehensive description of patients meeting the primary objective.

Results:
A total of 37 patients were included in this study. Two (5.4%) patients achieved functional cure of HBV after being treated with long-term ART (Biktarvy) for more than 2 years (95% CI 0.7-18.2). Out of the 37 enrolled patients, labs were only ordered for 31 because the remaining appointments were outside of the study time period. Ultimately, labs were collected for 12 (74%) of appointments due to logistical reasons. None of the patients who achieved functional cure of HBV were eligible for HBV re-vaccination due to the production of anti-HBs at the time of cure. Thus, both patients seroconverted without requiring the HBV vaccine. One patient with functional cure of HBV developed an anti-HB level of 10, indicating complete protection against HBV. It is uncertain if the remaining cured patient achieved full immunity because the appropriate quantitative anti-HB lab was not ordered.

Conclusion:
The incidence of functional cure amongst patients co-infected with HIV and HBV was lower than previously reported rates in the literature, which is likely due to our small sample size and high exclusion rate. Our results

add new local evidence about the incidence of functional cure of hepatitis B in patients coinfected with HIV and validate the need for universal HBV therapy in this population. Practice changing recommendations that can be gathered from this study includes implementing a new standardized workflow protocol for coinfected patients to encourage laboratory stewardship, providing additional guidance that will assist practitioners with medication management decisions for specific clinical scenarios (i.e. requiring immunosuppressive therapy) and creating opportunities to involve current on-site RCID pharmacists into this new workflow. Further local studies are needed, however, to determine the most accurate incidence of hepatitis B functional cure rates within this region and to evaluate the most appropriate means of properly monitoring this unique patient population.

global: Y

11:00am – 11:15am L **Assessing the Utility of Enoxaparin Anti-Xa Monitoring in Obesity for Venous Thromboembolism (VTE) Prophylaxis on Clinical Outcomes in the Hospital Setting** Parthenon 2

Moderators: Brook Jacobs

Presenters: Emilee Byrd

Evaluators: Erika Ingram

Title: Assessing the Utility of Enoxaparin Anti-Xa Monitoring in Obesity for Venous Thromboembolism (VTE) Prophylaxis on Clinical Outcomes in the Hospital Setting

Authors: Emilee Byrd, Angelica Marques, Ann Maxwell

Background: Anti-Xa monitoring has been suggested to assess enoxaparin dosing in certain patient populations for the treatment of venous thromboembolism (VTE). However, there is no clear guidance on goal ranges for prophylactic enoxaparin and how this can affect the bleeding or clotting risk. Morbid obesity (BMI >40 kg/m2) is an important factor that can increase the risk of VTE. Some institutions have adopted anti-Xa monitoring in this patient population to guide prophylactic dosing. The purpose of this research study is to assess the use of anti-Xa monitoring for VTE prophylaxis using enoxaparin in obesity and its impact on clinical outcomes.

Methods: This is a retrospective, observational single center cohort study evaluating morbidly obese patients admitted to McLeod Regional Medical Center that received prophylactic dosing of enoxaparin between August 1, 2023 and July 31, 2024. In order to be included in the study, patients needed to be 18 years or older, have a BMI >40 kg/m2, receive at least three doses of enoxaparin, and have at least one anti-Xa level collected. Patients with acute kidney injury (AKI) within the last seven days, pediatric patients, pregnant patients, orthopedic surgery patients, and trauma patients will be excluded. The primary outcome is a composite of any VTE and any bleeding during hospitalization following prophylactic enoxaparin initiation. Secondary outcomes will include the individual components of the primary outcome (VTE, bleeding), number of repeat anti-Xa levels, percentage of anti-Xa levels in goal range and percentage of anti-Xa levels drawn within an appropriate time frame.

Results: A total of 218 patients with a BMI >40 kg/m2 and receiving enoxaparin for VTE prophylaxis were reviewed. After applying the exclusion criteria, 81 patients were included in the study.

The median age of patients included was 58 [IQR 44,70] with normal renal function and a median BMI of 50 [IQR 44,58]. Of the 81 patients included, 11% were also on concomitant NSAIDs and 40% of patients were receiving concomitant antiplatelet therapy with the most common being aspirin.

For the primary composite outcome there were no incidences found of VTE and any bleeding in the 81 patients included in the study. 79% of the 81 anti-Xa levels collected were within the appropriate time frame with 59% of those levels being within the goal range. The incidence of sub-therapeutic levels that were collected within the appropriate time frame was 27% and 14% for supra-therapeutic levels.

Conclusions: Dose adjusting enoxaparin for VTE prophylaxis in morbidly obese patients does not appear to increase bleeding or VTE events. Anti-Xa monitoring can for VTE prophylaxis can lead to wasted resources when levels are drawn inappropriately and also lead to additional blood draws from the patient to obtain the level within the time frame. Based on the findings from this study, in patients with stable renal function receiving BMI dosing of enoxaparin it is reasonable to not check anti-Xa levels as this was not correlated with VTE or bleeding. Concomitant therapy with aspirin did not appear to increase the risk of bleeding.

global: Y

11:00am – 11:15am L **Safety and Efficacy of Direct-acting Oral Anticoagulants versus Warfarin in the Treatment of Venous Thromboembolism in Severely Obese Patients** Parthenon 1

Moderators: Matt Conley
Presenters: Olukemi Omotola
Evaluators: Eric Marr

Title: Safety and Efficacy of Direct-acting Oral Anticoagulants versus Warfarin in the Treatment of Venous Thromboembolism in Severely Obese Patients

Authors: Olukemi Omotola, Madeline Shepherd, Evelyn Grafton

Objective: This study aims to compare the efficacy and safety of DOACs, particularly apixaban and rivaroxaban, versus warfarin in patients with severe obesity diagnosed with VTE.

Background: Venous thromboembolism (VTE), encompassing deep vein thrombosis (DVT) and pulmonary embolism (PE), is a serious and potentially life-threatening condition. Anticoagulation therapy is the cornerstone of treatment for VTE to prevent clot progression, recurrence, and associated complications. Traditionally, warfarin has been the mainstay of treatment; however, direct-acting oral anticoagulants (DOACs), such as apixaban and rivaroxaban, have gained widespread use. In contrast to warfarin, their fixed dosing, fewer drug interactions, and lack of routine laboratory monitoring requirements make DOACs an appealing alternative. In the general population, DOACs have demonstrated non-inferior or superior efficacy and safety profiles compared to warfarin for the treatment of VTE. However, data is limited regarding their use in patients with severe obesity, defined as a body mass index (BMI) ≥ 40 kg/m². Given the growing prevalence of obesity, determining the safest and most effective anticoagulation strategies in this population is critical.

Methods: This was a retrospective chart review of adult patients with a BMI of ≥ 40 kg/m2 who received either apixaban, rivaroxaban, or warfarin for the treatment of venous thromboembolism from January 1, 2019 to September 30, 2024. Patients were excluded if they were pregnant or breastfeeding, had known hypersensitivity or contraindications to one of the study drugs, experienced active bleeding within 6 months of the start of the study time frame, had a history of a known hypercoagulable state, or if they received a fibrinolytic, mechanical thrombectomy, or underwent EkoSonic endovascular system (EKOS) procedure. The primary endpoint was VTE recurrence within one year. Secondary endpoints included major bleeding occurrence, clinically relevant non-major bleeding (as defined by the International Society of Thrombosis and Hemostasis), and all-cause mortality at one year.

Results: The study included 76 patients, with 60 in the DOAC group and 16 in the warfarin group. For the primary outcome, 6 patients (10%) in the DOAC group experienced VTE recurrence versus 2 patients (12.5%) in the warfarin group (p=0.3186). In the DOAC group, 3 patients (5%) experienced a major bleeding event, compared to 1 patient (6.3%) in the warfarin group (p= 0.4268). Two patients (3.3%) in the DOAC group experienced clinically relevant non-major bleeding, while no patients in the warfarin group had this type of bleeding event (p= 0.6211). Finally, in the DOAC group, there were no reported deaths, while in the warfarin group, 2 patients (12.5%) died (p= 0.0421), making this the only statistically significant finding in the study.

Conclusion: DOACs are a safe and effective alternative to warfarin for treating VTE in severely obese patients. Given their comparable efficacy and lower all-cause mortality, DOACs may be a preferred choice in clinical practice.

global: Y

11:00am – 11:15am O **Incidence of nausea and vomiting with modified antiemetic regimens for patients receiving carboplatin AUC ≥ 4** Olympia 2

Moderators: Schylar Cheyenne Hathaway
Presenters: Ramsey Shane
Evaluators: Lacey Ioppolo

Title:
Incidence of nausea and vomiting with modified antiemetic regimens for patients receiving carboplatin AUC ≥ 4

Authors: Ramsey Shane, Amanda Cass

Objective:
The purpose of this study is to determine the incidence of CINV with different antiemetic regimens and alterations in antiemetic regimens in patients receiving a modified antiemetic regimen with carboplatin AUC ≥ 4.

Background:
Chemotherapy-induced nausea and vomiting (CINV) is a major side effect of cancer treatment that affects patient quality of life. The National Comprehensive Cancer Network (NCCN) provides CINV recommendations for patients based on the emetic risk of the chemotherapy agents in their regimen, previous use of antiemetic agents, and patient risk factors. **In the updated 2017 NCCN CINV guidelines, carboplatin emetic potential was updated from all carboplatin doses being moderately emetogenic to carboplatin AUC < 4 classified as moderately emetogenice and AUC ≥ 4 as highly emeticemetogenic.** This recommendation adds neurokinin-1 receptor antagonists (NK-1 RA) to the standard regimen of a 5-HT3 receptor antagonists and dexamethasone with or without olanzapine for antiemetic prophylaxis in patients receiving carboplatin with AUC ≥ 4 mg/mL. There is debate amongst clinicians if the highly emetic classification is clinically necessary empirically citing additional adverse effects of antiemetic agents and financial burden for the healthcare system as reasons. The current practice at Vanderbilt University Medical Center (VUMC) includes a variety of antiemetic options for treatment plans including carboplatin AUC ≥4, and antiemetic regimens are decided by disease state groups based on their experience. Thus, not all regimens using carboplatin AUC ≥ 4 are treated as a highly emetic chemotherapy regimen.

Methods:
A retrospective, single-center cohort analysis was conducted including patients who received chemotherapy regimens containing carboplatin AUC ≥ 4 between January 2019 through July 2024 at the Vanderbilt Ingram Cancer Center (VICC). The treatment plans included in this study came from patients receiving treatment for either lung, gynecologic, or gastrointestinal cancers. Additionally, patients had to complete at least 2 cycles of therapy with carboplatin AUC ≥ 4. Patients were excluded if their treatment plan contained other cytotoxic chemotherapy agents except for paclitaxel. Data was collected through chart review in electronic medical record. The primary objective was to determine the incidence of CINV with different antiemetic regimens and if there was a change in the antiemetic regimen during treatment with carboplatin and up to three weeks after the carboplatin dose.

Results:
A total of 243 patients were screened for inclusion across the three disease states. There were 50 patients included from gynecology and lung cancers, and there were 41 patients included from the gastrointestinal cancers. Data analysis is still ongoing.

Conclusion:
In Progress

global: Y

11:20am – 11:35am

Evaluating the Efficacy of a Standardized Diuretic Order Panel versus Provider-Prescribed Diuretic Dosing in Acute Decompensated Heart Failure (ADHF) Athena I

Moderators: Anne-Kathryn Priest

Presenters: Yanise Hurt

Evaluators: Robin Fischer

Evaluating the Efficacy of a Standardized Diuretic Order Panel versus Provider-Prescribed Diuretic Dosing in Acute Decompensated Heart Failure (ADHF)

Yanise Hurt, Jarvett Cox

Background: Acute decompensated heart failure (ADHF) is a leading cause of hospitalization, often driven by fluid overload. Effective diuresis is critical to improving clinical outcomes in this population; however, variability in prescribing practices can lead to inconsistent care and suboptimal results. The implementation of a standardized Heart Failure Diuresis Panel offers an evidence-based approach to diuretic therapy, promoting consistent and effective fluid removal while potentially reducing hospital length of stay. This study aimed to evaluate the clinical outcomes of ADHF patients treated with diuretics using a standardized panel compared to those managed with individualized provider-prescribed dosing, focusing on its impact on hospital length of stay.

Methodology: This retrospective, single-center chart review included 168 adult patients admitted with a primary diagnosis of ADHF at Wellstar Cobb Medical Center between January 1, 2023, and December 31, 2023. Patients were stratified into two groups based on their diuretic management: those who received therapy guided by the standardized Heart Failure Diuresis Panel and those managed with provider-prescribed dosing. The primary endpoint of the study was hospital length of stay. Secondary endpoints included the mean time to transition from intravenous (IV) to oral diuretics, door-to-diuretic time, 30-day heart failure readmission rates, mean changes in urine output and body weight, and diuretic prescriptions at discharge. Data was extracted from electronic medical records through a computer-generated report, and statistical analyses were conducted using t-tests for continuous variables and chi-square tests for categorical variables to evaluate the impact of the standardized panel on clinical outcomes.

Results: In the comparison of patients managed with the Heart Failure Diuresis Panel versus provider-prescribed diuretic dosing, there was no significant difference in hospital length of stay (4.79 days vs. 4.75 days; P=0.47) or in the mean time to transition from IV to PO diuretics (68.9 hours vs. 68.4 hours; P=0.23). Similarly, door-to-diuretic time (7.1 hours vs. 7.7 hours; P=0.41), 30-day heart failure readmission rates (8.3% vs. 9.5%; P=0.79), and diuretic prescription rates at discharge (85.7% vs. 76.2%; P=0.35) did not differ significantly between groups. However, the panel group demonstrated significantly greater mean urine output at 24 hours (1,584 mL vs. 1,283 mL; P=0.048), indicating enhanced diuretic responsiveness, though no significant differences were observed at 2 or 48 hours. The mean change in body weight was comparable between groups both at 24 hours (0.86 kg vs. 0.50 kg; P=0.29) and at discharge (3.07 kg vs. 2.62 kg; P=0.35). Although the standardized panel did not significantly affect hospital length of stay or most secondary measures, it was associated with improved early diuretic efficacy as demonstrated by greater urine output within the first 24 hours.

Conclusion: The Heart Failure Diuresis Panel did not demonstrate a significant impact on primary or secondary outcomes, including hospital length of stay. However, the consistent administration of appropriate IV diuretic dosing by providers not utilizing the panel suggested that its core principles have been effectively integrated into routine clinical practice. These findings are consistent with the DOSE trial, which underscores the importance of optimized diuretic strategies for symptom relief and fluid management in heart failure. This presents an opportunity to improve provider adherence to these protocols, potentially further optimizing patient outcomes.

11:20am – 11:35am B **Impact of a Remote Continuous Glucose Monitoring Service in an Ambulatory Care Setting** Athena C

Moderators: Devin Lavender

Presenters: Alexa Williams

Evaluators: Crystal Wright

Title: Impact of a Remote Continuous Glucose Monitoring Service in an Ambulatory Care Setting

Authors: Alexa Williams, Matthew Holt, Ryan Cromer, TJ Henderson, Aayush Patel

Background: Continuous glucose monitoring (CGM) offers an alternative to the traditional self- monitoring blood glucose methods. Traditional methods, which may negatively impact patient satisfaction, cannot account for glycemic excursions and hypoglycemic unawareness. CGM provides more data points to assess glycemic variation and generates an ambulatory glucose profile (AGP) which provides calculated percentages of time in range (TIR), time below range (TBR), and time above range (TAR) for glucose levels in a measured time period as well as hourly. The reported glycemic trends can be used by providers to better understand the time and frequency glucose levels are out of the recommended range and customize diabetes regimens appropriately. At the Piedmont Columbus Family Medicine Center, many patients have begun using CGMs to share data with their providers. Based on glycemic trend data, providers can make informed decisions on customizing patient-specific regimens and continue to monitor their patient's blood glucose levels closely. The purpose of this retrospective chart review was to compare the mean difference in A1c improvement between patients managed with remote CGM and those managed without this service in a multidisciplinary family medicine practice.

Methods: A retrospective chart review was completed of patients with diabetes at Piedmont Columbus Family Medicine Center with a baseline A1c ≥7, comparing those utilizing CGMs with those not utilizing CGMs. Improvement in A1c was determined from the baseline A1c at the beginning of the study to the final A1c level recorded for each patient. The mean difference in A1c was determined from all patients within each group and the overall improvement in A1c between the control group and the treatment group was compared. The LibreView® and Dexcom Clarity® systems were used to store patient's blood glucose levels from their CGM to determine TIR, TBR, and TAR within various date ranges. Baseline TIR, TBR, and TAR were determined at the beginning of the study time period and then again around the time of each A1c measured for each patient. Improvement in TIR, TBR, and TAR were determined from baseline to the final values measured at the end of the study. Data was collected from patients beginning on January 1, 2024 until February 28, 2025.

Results: There was a total of 78 patients included in the study, 39 patients that utilized CGM and 39 patients that did not utilize CGM. Baseline characteristics were similar between groups, with the largest difference seen in race and diabetes type. For the primary objective of mean difference in A1c, the CGM patients had a baseline A1c of 9.3% and a final A1c of 8.1% with an average reduction of 1.2% and the non-CGM patients had a baseline A1c of 8.0% and a final A1c of 6.7% with an average reduction of 1.3%. The mean difference in A1c was not statistically significant between groups. For secondary objectives, the CGM patients had a total baseline TIR of 53.8% and a final TIR of 57.2% with an average increase of 3.3%, a total baseline TBR of 0.5% and a final TBR of 0.6% with an average increase of 0.1%, and a total baseline TAR of 45.7% and a final TAR of 42.2% with an average reduction of 3.5%. These secondary objectives were not statistically significant. There was a total of 189 pharmacy interventions, 172 in the CGM group and 17 in the non-CGM group.

Conclusion: Continuous glucose monitoring offers an alternative to traditional finger stick monitoring, providing glucose trends and reports such as the ambulatory glucose profile including detailed analysis of time in, above, and below range. The impact of A1c was similar between groups, however the duration of patient inclusion for non-CGM patients was higher, offering more time for patients to better control their diabetes. While there was not a statistically significant difference seen between groups, average A1c was improved when utilizing a CGM, which may provide a good option for patients with uncontrolled diabetes.

Contact: alexa.williams@piedmont.org

global: Y

11:20am – 11:35am B **Operation Weight Loss: Impact of Pharmacist Guided Weight Loss Medication Management Service for Veterans** Athena D

Moderators: Ashley Woodhouse
Presenters: Amanda Collett-Burgdorf
Evaluators: Anne Warren

Title

Operation Weight Loss: Impact of a Pharmacist Guided Weight Loss Medication Management Service for Veterans

Authors

Amanda Collett-Burgdorf, Fayza Griffin, Brittney Howard

Practice Site

Fayetteville NC VA Coastal Health Care Center

BackgroundEvaluate the impact of a pharmacist-led weight loss medication management service in a Veteran population.MethodsThis was a retrospective, prospective quality improvement initiative. Eligible Veterans with verifiable participation in the comprehensive lifestyle intervention (CLI) provided by our facility, MOVE!, were prescribed one of the following five medications approved by the Food and Drug Administration for weight loss: naltrexone/bupropion, orlistat, phentermine/topiramate, semaglutide, or tirzepatide. Veterans were excluded if they were not established with a Department of Veterans Affairs (VA) primary care provider. Data was collected via the Computerized Patient Records System (CPRS). Post-medication initiation, Veterans were assessed by a Clinical Pharmacist Practitioner (CPP) at 4-week intervals to assess tolerability and weight loss. Results47 Veterans were included. 28 (59.57%) achieved ≥ 5% TWBL.

By medication:

- semaglutide (n=32): 59.38% achieved ≥5% TBWL, 90.63% ≥3% TBWL
- tirzepatide (n=6): 83.33% achieved ≥5% TBWL
- phentermine/topiramate (n=6): 50% achieved ≥5% TBWL
- orlistat (n=2): 50% achieved ≥5% TBWL
- naltrexone/bupropion (n=1): 0% achieved ≥3% TBWL

ConculsionsPharmacist-led medication management of anti-obesity medications appeared effective in achieving the primary endpoint of 5% TBWL or greater at 12 weeks after medication initiation. As anticipated, semaglutide and tirzepatide displayed the highest success rates. One limitation of this quality improvement initiative was the small sample sizes for some medications, namely the oral medication options. The findings align with clinical trial data and highlight the role of pharmacists in optimizing weight loss therapy. Future initiatives may focus on assessing success rates beyond 3 months to identify the long-term benefit of a pharmacist-led weight management medication service.

global: Y

11:20am – 11:35am C **Evaluation of Protamine Dosing Strategies Following Cardiopulmonary Bypass** Athena B

Presenters: Justine Bur

Evaluators: Laura Schalliol, Avery Shawen

EVALUATION OF PROTAMINE DOSING STRATEGIES FOLLOWING CARDIOPULMONARY BYPASS

Justine Bur, Amanda Sowder, Hetal Patel
AdventHealth Orlando-Orlando, FL

OBJECTIVE: Compare the impact of low, medium, or high protamine dosing on bleeding outcomes following cardiopulmonary bypass assisted cardiac surgery.

BACKGROUND: Protamine is used to reverse the anticoagulant effects of heparin after cardiopulmonary bypass (CPB). Improper dosing of protamine may lead to increased postoperative bleeding. Although it is paramount to have an appropriate protamine-to-heparin dosing ratio, evidence remains weak on guiding optimal dosing and inconsistencies exist between guidelines. At our institution, protamine dosing is routinely based off the initial heparin bolus. To our knowledge, no studies have compared protamine-to-heparin dosing ratios in otherwise healthy patients undergoing initial, elective CPB-assisted cardiac surgery.

METHODS: A single centered, retrospective analysis was performed at a major tertiary referral hospital. Healthy adults aged 18 to 75 years old who underwent CPB-assisted coronary artery bypass graft or valve repair or replacement, with or without concomitant left atrial appendage ligation, MAZE, or myectomy were included. Exclusion criteria included chronic kidney disease or dialysis, liver dysfunction, hematologic disorders, pregnancy, or cancer. Patients were also excluded if they received non-packed red blood cell products in the operating room (OR). Primary endpoints included 24-hour chest tube output and 24-hour postoperative allogeneic transfusion requirements. Secondary endpoints included reintubation within 24 hours and operative re-exploration within 24 hours due to postoperative bleeding. All endpoints were measured after disposition from OR to the intensive care unit. Outcomes were evaluated based on low (<1:1), medium (1:1), and high (>1:1) protamine-to-heparin dosing ratios based on initial heparin and protamine boluses administered.

RESULTS: Seventy of the 267 patients screened between February 2023 and January 2025 were included in the analysis. Patients were median age 60 years, median BMI of 28.6 kg/m2 and 42 (60%) were male. At baseline, median pre-operative labs included: hemoglobin 13.6 g/dL, hematocrit 40.3%, platelets 240,000/μL, ACT 107 seconds, INR 1.0 and aPTT 29.6 seconds. Mitral valve replacement, 37 (53%), and repair, 15 (21%), were the most common cardiac surgeries. Median bypass time was 82 minutes. Median heparin and protamine boluses administered were 36,000 units and 320 mg, respectively. Protamine-to-heparin dosing ratios were characterized as follows: 32 (46%) patients comprised low, 28 (40%) comprised medium, and 10 (14%) comprised high. Twenty-four-hour chest tube output for low, medium, and high dose groups totaled 468, 530, and 850 mL, respectively (p=0.136). Of the 36% of patients who received transfusions, median total volume of transfusions for low, medium, and high dose groups were 506, 349, and 473 mL, respectively (p=0.936). No patients were reintubated due to postoperative bleeding within 24 hours and one patient in the high dose group returned to the OR for re-exploration for postoperative bleeding. Lastly, the median time to extubation of low, medium, and high dose groups was 226, 188, and 351 minutes, respectively (p=0.052).

CONCLUSION: This is the first study evaluating association of protamine-to-heparin dosing ratios with bleeding outcomes in otherwise healthy patients undergoing initial, elective CPB-assisted cardiac surgery. Despite the small sample size, there was a trend in increased post-operative 24-hour chest tube output as the protamine-to-heparin ratio increased. Although time to extubation did not statistically differ between groups, the greater time to extubation experienced by the high dose protamine group presents a clinically interesting finding for further

exploration.

global: Y

11:20am – 11:35am R **Comparative Analysis of Sedation and Analgesia Requirements in Trauma Patients Presenting with a Positive Drug Toxicology Screen** Athena H

Moderators: Maggie Goode
Presenters: Sydney Kermeen
Evaluators: Madeline Motes

- **Title:** Comparative Analysis of Sedation and Analgesia Requirements in Trauma Patients Presenting with a Positive Drug Toxicology Screen
- **Authors**: Sydney Kermeen, Sarah Alimenti, Michael Honaker, Kenji Leonard, and Emily Whitehead
- **Objective:** Compare analgesia and sedation requirements in trauma patients requiring intubation after presenting with a positive urine drug screen (UDS) and/or serum ethanol level to patients presenting with a negative toxicology screen.
- **Self Assessment Question:** True or False: Due to impaired drug metabolism and increased drug tolerance, trauma patients acutely intoxicated with amphetamine, cocaine, PCP, MDMA, or ethanol may have higher opioid requirements during mechanical intubation?
- **Background:** Pre-injury illicit substance use and intoxication are predictors of ICU admission and increased analgesia and sedation requirements in patients admitted to the hospital following traumatic injuries. Literature evaluating analgesia and sedation in patients presenting with a positive toxicology screen is limited and further research is warranted to guide treatment.
- **Methods:** This was a single-center, retrospective, observational study including adult patients admitted to the surgical intensive care unit (SICU) who were intubated for at least 48 hours following a trauma and presented with either a positive urine drug screen (UDS) for cannabinoids, cocaine, amphetamines, phencyclidine, ecstasy and/or elevated serum ethanol level within the first 24 hours of admission. Patients were excluded if they had withdrawal of care or were transferred out of the SICU within 48 hours of admission, utilized short acting opiates for at least 30 days or long-acting opiates as a home medication, had a pre-diagnosed psychiatric illness, or utilized pentobarbital, chemical paralysis, or extracorporeal membrane oxygenation during the study period. The control group included patients presenting with both a negative UDS and serum ethanol level. There were two comparator groups: group 1 with both a positive UDS and serum ethanol level, and group 2 with a positive UDS and negative serum ethanol level. The primary outcome was median daily dose of opioid requirements in morphine milligram equivalents until extubation, transfer from SICU, or 30 days. Some of the secondary outcomes included mean daily benzodiazepine use, mean daily dose of continuous sedation, utilization of adjunctive analgesia and sedation agents, length of mechanical ventilation, average daily pain scores, and percentage of time within goal sedation.
- **Results:** A total of 151 patients were included in the analysis, with 50 patients each in the UDS(-)/EtOH(-) and USD(+)/(-) groups and 51 patients in the UDS(+)/EtOH(+) group. Baseline characteristics and patient demographics between groups were similar between groups. There were no differences in median daily MME, LME, dexmedetomidine, or ketamine use between groups; however, intoxicated patients in the UDS(+)/EtOH(+) and UDS(+)/EtOH(-) used a significantly higher median dose of propofol (30.9 [21.5, 36.7] and 33.9 [22.7, 50.0] vs 33.9 [13.7, 33.6] mcg/kg/min). UDS(+)/EtOH(+) and UDS(+)/EtOH(-) groups also used more adjunctive agents (66.7 % and 82.0% vs 46.0%, p=0.0008) and ERAS medications (45% and 47% vs 46%, p=0.0028). Additionally, intoxicated patients achieved lower RASS levels on continuous sedation compared to non-intoxicated patients (-1 [-2.0, 1.0] and -1 [-2.0, 1.0] vs -2 [-2.8, 1.0]). Of note, the incidence of mortality was higher in the non-intoxicated group (7% and 1% vs 11%, p=0.0101). There were no differences in duration of intubation, BPS scores, ICU LOS, hospital LOS, self extubation, or trach placement.
- **Conclusion:** Mechanically-ventilated patients with a positive UDS and/or serum ethanol level may not have higher MME or LME requirements. However, multimodal adjunctive analgesia and sedation methods may be warranted.

sydney.kermeen@ecuhealth.org

global: Y

11:20am – 11:35am R **Comparative Effects of 3% Sodium Chloride Continuous Infusion Versus Intermittent Boluses on Renal Outcomes** Athena G

Presenters: Abbygail Wilbourn

Evaluators: McKenzie Hodges, Blake Johnson

Title: Comparative Effects of 3% Sodium Chloride Continuous Infusion Versus Intermittent Boluses on Renal Outcomes

Authors: Abbygail Wilbourn, Braiden Sorgenfrei, Alex Ewing, Jenna Sorgenfrei, Michael Wagner

Objective: Identify hypertonic saline administration that leads to decreased adverse renal outcomes while achieving target serum sodium levels for intracranial pressure management.

Self Assessment Question: What strategy does the 2024 American College of Surgeons (ACS) Trauma Quality Improvement Program (TQIP) guidelines recommend for ICP management in TBI?

Background: Cerebral edema, often resulting from traumatic brain injury (TBI), can lead to elevated intracranial pressure (ICP), which is associated with poorer outcomes. American College of Surgeons and Neurocritical Care Society guidelines recommend hyperosmolar therapy, such as hypertonic saline or mannitol, for managing elevated ICP; however, these guidelines primarily focus on bolus dosing, with limited data on continuous infusion strategies. This study aims to evaluate whether intermittent bolus therapy reduces the incidence of acute kidney injury (AKI) compared to continuous infusion of hypertonic saline, with the goal of improving safety and informing best practices for hyperosmolar therapy at a 864-bed academic medical center in South Carolina, USA.

Methods: This single-center, retrospective study at a 864-bed academic medical center in South Carolina, USA assessed trauma patients admitted to the ICU between January 2022 and December 2023 who received either intermittent boluses or continuous infusion of 3% sodium chloride for suspected elevated intracranial pressure (ICP). Primary outcomes included the combined incidence of acute kidney injury (AKI), hyperchloremia, and metabolic acidosis within 7 days, while secondary outcomes focused on individual complications, time to serum sodium goals, and major renal events. Data were collected through chart review and stored in REDCap, with approval from the institution’s IRB.

Results: A total of 88 patients were included (61 continuous infusion, 27 bolus). Continuous infusion patients were younger and had longer ICU stays (6.8 vs 4.8 days, p=0.02), though hospital stays were similar. Hypertonic saline exposure was higher in the continuous group, particularly on days 2–3 (p<0.001). The combined incidence of acute kidney injury, hyperchloremia, and metabolic acidosis was significantly higher in the continuous group (91.8% vs 66.7%, p=0.009), mainly due to hyperchloremia (p=0.002). Multivariate analysis confirmed infusion method as a significant predictor (aOR 0.19, p=0.03). Switching to sodium acetate occurred in 38 patients, more commonly in the infusion group but not statistically significant. Those who switched had higher hyperchloremia incidence after day 4 (p=0.0009). No differences were found in secondary outcomes.

Conclusion: Bolus therapy achieved similar time to target sodium levels while resulting in fewer electrolyte-related complications—particularly hyperchloremia—and a lower combined incidence of kidney injury, hyperchloremia, and metabolic acidosis compared to continuous infusion. These findings suggest that bolus therapy may be a safer and more favorable strategy for hypertonic saline administration.

global: Y

11:20am – 11:35am | **Impact of an Antimicrobial Stewardship Bundle on the Treatment of Urinary Tract Infections in Older Adults** Athena A

Moderators: Brian Knott

Presenters: Elly Sherman

Evaluators: Cameron Lanier

Title: Impact of an Antimicrobial Stewardship Bundle on the Treatment of Urinary Tract Infections in Older Adults

Authors: Elly R. Sherman, PharmD; Maria Muehrcke, PharmD, MBA, BCPS; Laura Bobbitt, PharmD, BCIDP

Objective: To assess how antimicrobial prescribing changed after the implementation of a geriatrics-specific antimicrobial stewardship bundle

Background: Urinary tract infections (UTIs) are a common indication for hospital admission in geriatric patients. However, these infections are often misdiagnosed, especially in patients with altered mental status. The risks of overtreating UTIs include the development of antimicrobial resistance and adverse drug effects, including *C. difficile* colitis. Many institutions, including Vanderbilt University Hospital (VUH), have implemented antimicrobial stewardship initiatives in response to these risks. This retrospective, single-center analysis aims to assess how antimicrobial prescribing changed after the implementation of a geriatrics-specific antimicrobial stewardship bundle at VUH.

Methods: Included patients were ≥65 years of age, admitted to the geriatrics teaching service, and had a urinalysis ordered during admission. Patients with a neurogenic bladder, altered urologic anatomy, concomitant infection, who were receiving antibiotics immediately prior to admission, were neutropenic, or transitioned to comfort care within 48 hours of admission were excluded. The primary outcome was days of antimicrobial therapy per 1000 patient days. Secondary outcomes included rates of discontinuation of antibiotic therapy in asymptomatic bacteriuria, duration of therapy, rates of *C. difficile* colitis within 90 days, and proportion of patients with an inappropriate UTI diagnosis.

Results: In progress

Conclusions: In progress

global: Y

11:20am – 11:35am L **Blood Glucose Control in Post-Coronary Artery Bypass Graft (CABG) Patients** Parthenon 1

Moderators: Matt Conley
Presenters: Elise Richoux
Evaluators: Eric Marr

Title: Blood Glucose Control in Post-Coronary Artery Bypass Graft (CABG) Patients

Authors: Elise M. Richoux, Leslie A. Hamilton, Heather Wallhauser, Rachael Samples, Taylor Bird, Robert E. Heidel, Travis Fleming

Objective: The objective of this study was to evaluate the median of time within goal blood glucose range following CABG surgery while receiving a continuous insulin infusion in groups before and after an insulin protocol change.

Presentation Objective: Evaluate the impact and incidence of goal blood glucose attainment in patients post-CABG on a continuous insulin infusion before and after an insulin protocol change.

Self Assessment Question: Which statement best describes the impact of hyperglycemia during and after cardiac surgery?

Background: Hyperglycemia following cardiac procedures is common. This is likely due to surgical stress triggering catecholamine and cortisol release, along with intraoperative hypothermia induced during cardiopulmonary bypass, which stimulates sympathetic activity. Elevated blood glucose levels during the intra-operative and post-operative period of cardiac surgery is associated with an increased risk of mortality in patients with and without diabetes as well as prolonged ventilator times, atrial fibrillation, and delirium. Controlling blood glucose levels can mitigate consequences such as prolonged ventilation, delayed sternal wound healing, and risk of mortality in patients with and without diabetes. Existing literature has inconsistency in blood glucose targets relative to observed outcomes, prompting consideration of the optimal level of glycemic control for post-CABG patients. More recently, the Society of Thoracic Surgeons (STS) published consensus statements on perioperative cardiac care which included a goal blood glucose range of 140-180mg/dL once an insulin infusion is initated. A protocol change implemented in August 2023 for cardiothoracic surgery patients replaced the previous insulin drip titration method, based on a multiplier and a blood glucose goal

of 110-139 mg

global: Y

11:20am – 11:35am L **The Use of Direct Oral Anticoagulants in the Setting of Acute Kidney Injury and the Incidence of Bleeding** Parthenon 2

Moderators: Brook Jacobs
Presenters: Marion Javellana
Evaluators: Erika Ingram

TITLE: The Use of Direct Oral Anticoagulants in the Setting of Acute Kidney Injury and the Incidence of Bleeding
AUTHORS: Marion Javellana; Kyle Furlow; Nicole Metzger; Kayla Ann Phillips; Manila Gaddh; Ananth Vadde; Anna Crider; Amanda Van Prooyen; Carrie Callahan

OBJECTIVE: To determine if using direct oral anticoagulants (DOACs) in patients with acute kidney injury (AKI) increases bleeding events.

SELF ASSESSMENT QUESTION: Which of the following was the primary outcome measured in this study? A) Hospital length of stay (LOS) B) Major bleeding events C) 30-day all-cause readmissions

global: Y

11:20am – 11:35am O **Reduced Corticosteroid Dosing in Pediatric Renal Transplant Patients** Olympia 2

Moderators: Schylar Cheyenne Hathaway
Presenters: Alexander Durant
Evaluators: Lacey Ioppolo

Title: Reduced Corticosteroid Dosing in Pediatric Renal Transplant Patients

Authors: Alexander Durant, Aubrey Slaughter, Bailey Horne

Objective: To investigate the effects of maintenance corticosteroid dose reduction on blood pressure, hemoglobin A1c, and bone mineral density in pediatric renal transplant patients.

Background: Renal transplantation requires immediate and chronic immunosuppression to avoid acute organ rejection, which can compromise the integrity of the transplanted organ and be fatal. Consequently, a lifelong immunosuppressive regimen is required for all renal transplant recipients. One integral component of the backbone immunosuppressive regimen is corticosteroid therapy. In pediatric patients, there is a notable lack of data evaluating the deleterious effects associated with chronic corticosteroid therapy post-renal transplantation, as pediatric patients are often excluded from clinical trials and are consequently underrepresented in the literature. Wellstar MCG Health has recently transitioned from using prednisone or prednisolone doses of 0.1 mg/kg/day to 0.05 mg/kg/day, representing a 50% dose reduction in maintenance corticosteroid therapy. The purpose of this chart review is to investigate the effects of maintenance corticosteroid dose reduction on blood pressure, hemoglobin A1c, and bone mineral density in pediatric renal transplant patients.

Methods: This single-center, observational chart review included pediatric patients followed in the Wellstar MCG Health pediatric renal transplant clinic between 01/01/2022 and 12/31/2024. Exclusions included patients undergoing treatment for renal transplant rejection and patients no longer followed at the pediatric renal transplant clinic. The primary outcomes included a reduction in antihypertensive dosage or number of antihypertensive agents, an improvement in hemoglobin A1c or reduction in hyperglycemic agent dosage, and an improvement in BMD Z-score above -2.0 or a ≥20% improvement from baseline. Data analysis will utilize descriptive statistics for a non-parametric data set (e.g., median, IQR).

Results: A total of 13 patients were included in this chart review. The median patient age was 17 years. There were no notable differences between pre-reduction and post-reduction median systolic or diastolic blood pressure measurements or Z-scores. Dose reduction appeared to be associated with a decrease in median A1c of approximately 0.15 mg/dL. Corticosteroid dose reduction was also linked to a decrease in the number of prescribed osteoporosis medications in 57% of patients. The reduction had little impact on the number of prescribed anti-hypertensive and hyperglycemic agents prescribed per patient.

Conclusions: Corticosteroid dose reduction may contribute to improved glycemic control and a decrease in the number of osteoporosis medications prescribed per renal transplant patient. However, this review did not find a corresponding improvement in bone mineral density or blood pressure readings following the dose reduction.

global: Y

11:40am – 11:55am

Evaluating the impact of a pharmacist-driven osteoporosis screening and treatment program in women veterans at the Birmingham VA Health Care System (BVAHCS) Athena I

Moderators: Anne-Kathryn Priest
Presenters: Sara Chirambo
Evaluators: Robin Fischer

Title: Evaluating the impact of a pharmacist-driven osteoporosis screening and treatment program in women veterans at the Birmingham VA Health Care System (BVAHCS)

Authors: Sara Chirambo; Lisa Ambrose

Objective:
The purpose of this quality improvement project is to evaluate the effectiveness of pharmacist-led interventions using the VA Osteoporosis Screening Dashboard to enhance the identification of osteoporosis/osteopenia in patients seen in the Women's Health clinic at BVAHCS.

Self Assessment Question:
What is the impact of pharmacist intervention in osteoporosis screening?

Background:
Osteoporosis is a common chronic bone disease characterized by low bone mass and deterioration of bone structure. It predominantly affects women, with higher prevalence compared to men. Bone mineral density (BMD) peaks in early adulthood and declines with age, increasing fracture risk. The USPSTF and National Osteoporosis Foundation recommend routine screening for women aged 65 and older, typically using dual energy x-ray absorptiometry (DEXA). Despite guideline recommendations, screening rates for osteoporosis remain low. This project aims to evaluate whether the use of the VA Osteoporosis Screening Dashboard by pharmacists improves identification of osteoporosis/osteopenia at the Birmingham VA.

Methods:
- Patients without a DEXA scan will be identified via the VA Osteoporosis Screening Dashboard
- Patients identified on dashboard will be reviewed and eligibility will be confirmed via chart review
- Pharmacists will communicate screening recommendations with patient
- Pharmacists will place order for DEXA scan with patient consent
- DEXA scan will be scheduled through Medical Support Assistants (MSAs) at the Birmingham VA
- Pharmacists will contact patients to discuss DEXA/FRAX results and counsel patients on lifestyle modifications to reduce risk of osteoporosis. If patients are confirmed to have osteoporosis/osteopenia, treatment will be initiated by PharmD provider

Inclusion Criteria:
- Women aged 65 years and older
- No prior history of receiving DEXA scan in Computerized Patient Record System (CPRS)
- Patients followed by a provider in Women’s Health clinic

Exclusion Criteria:
- Patients currently receiving pharmacotherapy for osteoporosis or osteopenia
- Patients previously diagnosed with osteopenia or osteoporosis

Results:
The pharmacist-led osteoporosis screening initiative at the Birmingham VA Women's Clinic demonstrated a positive impact on patient care. 47/80 patients were reached by phone and of those 47, 33 patients were interested in a DXA screening. 57% patients reached who were interested scheduled a DXA scan. The pharmacist's outreach efforts, supported by the use of an osteoporosis dashboard created by the VISN7 VA Academic Detailing team resulted in an increase in screening rates compared to baseline. The intervention achieved a high patient acceptance rate, suggesting that direct pharmacist engagement encouraged participation.

Conclusion:
This quality improvement (QI) project highlights the value of pharmacist intervention in advancing preventative health measures within the VA healthcare system, specifically within women's health. By proactively identifying patients in need of screening and facilitating access to care, pharmacists played a role in increasing osteoporosis screening rates among older female veterans.

11:40am – 11:55am B **Diabetes Outcomes of Patients Followed by Embedded Pharmacists in Primary Care Clinics** Athena D

Moderators: Ashley Woodhouse
Presenters: Cassandra Twisdale
Evaluators: Anne Warren

Title: Diabetes Outcomes of Patients Followed by Embedded Pharmacists in Primary Care Clinics

Authors: Cassie Twisdale, Amy Robinson, Danielle Land, Alex Ewing

Objective: Identify diabetes outcomes and early impacts of having embedded pharmacists in primary care clinics

Self Assessment Question: Which of the following were early impacts within 3-6 months of having pharmacists manage diabetes in primary care clinics?
A) Significant lowering of A1c
B) Close follow up with phone visits
C) Increased prescribing of GLP-1 agonists
D) All of the Above

Background: The American Diabetes Association supports the use of a collaborative, multidisciplinary team approach to improve patient care when managing diabetes. Pharmacists ensure patients are on optimal guideline directed medical therapy, provide patient education, and monitor with close follow-up to allow for quicker dose escalations. Prisma Health recently embedded clinical pharmacists into two additional primary care clinics. This study will assess the pharmacists' impact on quality of care by comparing diabetes outcomes of patients managed by newly embedded clinical pharmacists to diabetes outcomes of patients managed exclusively by providers.

Methods: A multicenter, observational, retrospective cohort study was conducted examining adults 18 years of age or older with a diagnosis of diabetes and a hemoglobin A1c (A1c) above 8%. Patients in the pharmacist intervention group were referred to the PharmD between December 2023 to March 2024 and were required to have at least two interactions with the pharmacists during the study period. Comparator clinics were two primary care clinics within the health system that did not have an embedded pharmacist but were of similar size and patient demographics to the investigated clinics. Patients meeting inclusion criteria from the comparator clinics were randomly selected for analysis using a random number generator. The primary outcome was the reduction in A1c from baseline to next A1c three to six months later. Secondary outcomes include percent of patients on a continuous glucose monitor (CGM), number of CGM touchpoints or interpretations, number of visits during study period, use of evidence-based therapies, emergency room or hospital admissions related to diabetes care, weight loss, and number of patients assisted with medication access issues.

Results: A total of 98 patients were included in the IRB-approved study with 49 patients in the pharmacist intervention group and 49 patients in the comparator primary care provider group. Baseline characteristics were similar between groups. The pharmacist group had a change in A1c from 9.97% to 7.83% at 3-6 months while the provider group had change in A1c of 9.51% to 9.36% at 3-6 months. A significant difference was found with the pharmacist group lowering A1c by 2.14% compared to the provider group lowering by 0.15% ($p<0.001$). Secondary outcomes of phone encounters, medication adjustment, continuous glucose monitor use, and assistance with medication access were statistically significant ($p<0.001$ for all). Pharmacists also initiated more GLP-1 RAs compared to provider (20 additional patients vs 1 additional patient, $p<0.001$). In patients with cardiovascular disease, pharmacists also had significantly more patients on a GLP-1 RA compared to the

provider group (68.42% vs 11.76%, p=0.002) No significant differences were found between groups with SGLT-2 inhibitor use, emergency room or hospital admissions related to diabetes care or weight loss.

Conclusion: Pharmacist management of type 2 diabetes significantly lower A1c. Pharmacists were able to provide closer follow up and assist with more medication access and continuous glucose monitor assessment than primary care providers. The early impacts of pharmacist management of diabetes can help to provide additional justification of more pharmacists in the primary care setting. Additionally, the impacts of pharmacists on diabetes outcomes help to support an automatic referral to pharmacists for patients with uncontrolled diabetes.

global: Y

11:40am – 11:55am

Y

Impact of Pharmacist-Led Intervention on Maintenance Inhaler Appropriateness in COPD Exacerbations

Athena B

Presenters: Kaysey Gilchrist

Evaluators: Laura Schalliol, Avery Shawen

Impact of Pharmacist-Led Intervention on Maintenance Inhaler Appropriateness in COPD Exacerbations
Kaysey Gilchrist, Emily Cooley, Taylor Wells, Danielle McGlynn, Michael Pitt

Background: Chronic Obstructive Pulmonary Disease (COPD) exacerbations are associated with worsening outcomes, including repeat hospital admissions. The Centers for Medicare and Medicaid created a Hospital Readmissions Reductions Program, which financially penalizes hospitals for excessive 30-day readmission rates of certain conditions, including COPD. Previous literature has indicated that pharmacists are uniquely positioned to identify interventions for COPD therapy optimization based on knowledge of clinical guidelines and insurance formularies. However, this study did not describe the implementation of pharmacist led transitions of care initiatives for patients with COPD. The purpose of this study was to identify the impact of pharmacist-led interventions in COPD patients prior to discharge on 30-day hospital readmission rates for COPD by evaluating appropriate maintenance inhaler therapy.

Methods: In July 2024, a new transitions of care service was implemented at Cape Fear Valley Medical Center (CFVMC) which enabled pharmacists to review patients admitted for a COPD exacerbation and send recommendations to the attending provider for optimization of maintenance inhaler regimens before discharge. Adult patients admitted to CFVMC between March 1, 2024 – June 30, 2024 (pre-intervention) and October 1, 2024 – January 31, 2025 (post-intervention) with a primary diagnosis of COPD exacerbation identified by ICD 10 and DRG diagnosis codes were retrospectively reviewed in this single-center study. The primary endpoint was to compare the percentage of patients admitted for COPD exacerbation who are discharged on appropriate maintenance inhaler therapy regimens pre- and post-pharmacist-led intervention.

Results: A total of 146 hospital encounters were included in the study with 59 hospital encounters in the pre-intervention group and 87 hospital encounters in the post-intervention group. Of the 146 hospital encounters included in the study, 32 regimens (54%) were appropriate at discharged in the pre-intervention phase compared to 67 (77%) in the post-intervention phase (P=0.004). The rate of 30-day hospital readmissions was lower in the post-intervention group compared to the pre-intervention group (19.5% vs 37.3%; P = 0.02).

Conclusions reached to date: This study provides further evidence to confirm the positive impact of pharmacist-led interventions on the provision of guideline-directed maintenance inhaler therapy in patients with COPD prior to discharge from a community teaching hospital.

global: Y

11:40am – 11:55am R **Angioedema Resolution: Evaluation of Low Dose and High Dose Steroids** Athena H

Moderators: Maggie Goode

Presenters: Cristina Martinez

Evaluators: Madeline Motes

Title: Angioedema Resolution: Evaluation of Low Dose and High Dose Steroids

Authors: Cristina V. Martinez, Evan C. Hardbeck, Nicholas Filk, Neha Naik, Maria C. CreelBulos, Jasleen K. Bolina

Background: According to the Centers for Disease Control, angioedema affects approximately 110,000 patients annually in the United States. Angioedema is characterized by self-limited swelling of the mucosal tissues in the face and larynx. It can become life-threatening if airway obstruction occurs, requiring prompt emergency care. Angioedema can be classified as either hereditary or acquired. In hereditary cases, swelling occurs due to a bradykinin response, whereas in acquired cases, it is triggered by a histamine response. Bradykinin-mediated angioedema is initially treated with a C1- esterase inhibitor, while histamine-mediated angioedema is managed with corticosteroids, antihistamines, and epinephrine. While corticosteroids are commonly used to treat angioedema there is a notable gap in current literature on optimal dosing strategies. This retrospective review aims to evaluate steroid use in angioedema patients by comparing low dose and high dose regimens to elucidate current practices, trends, and outcomes in symptom resolution.

Methods: This multicenter, retrospective, observational study included patients aged 18 years or older, diagnosed with angioedema, who received more than one dose of corticosteroids over a two-year period. Patients were excluded from the study if they were known to be pregnant or incarcerated. Patients were stratified into four groups based on their initial steroid agent and the secondary steroid treatment to which they were transitioned. Groups 1 and 2 received an initial high dose of steroids followed by a low dose in Group 2 or remained on high dose in Group 1. Groups 3 and 4 received an initial low dose followed by a high dose in Group 3 or remained on a low dose in Group 4. High dose was defined as an equivalent dose of hydrocortisone equal or greater to 250 mg. The primary objective of this study was resolution of angioedema, defined as discontinuation or de-escalation of steroid therapy, de-escalation of oxygen therapy, or documentation of resolution of symptoms. Secondary objectives included adjuvant angioedema treatments used, oxygen requirements over two days, incidence of intubation, hospital length of stay, ICU length of stay, and adverse effects including infection and hyperglycemia post steroid initiation.

Results: A total of 66 patients were categorized into four groups based on initial and subsequent steroid doses. The median time to angioedema resolution in the high dose to high dose group (Group 1) and the high dose to low dose group (Group 2) was 2 days. The low dose to high dose group (Group 3) had the shortest resolution time, with a median time of one day. In the low dose to low dose group (Group 4), the median time to resolution was 2.5 days. Group 1 included all patients who required intubation, accounting for 15% of the total study population. ICU length of stays was longest at 3 days in Group 1 followed by 2.5 and 1.5 days in Group 2 and 4 respectively. Additionally, patients in the higher dose regimen groups experienced higher rates of hyperglycemia and infection when compared to regimens with lower doses.

Conclusion: This study highlights the gap in current guidance for the use of corticosteroid dosing strategies for angioedema. While high dose regimens are commonly used, practitioners should assess patient specific factors due to increased risk of adverse effects with higher dosing regimens. Transitioning to lower doses may provide a safer and equally effective alternative. This area of practice calls for future research to develop standardized guidelines to optimize corticosteroid use in angioedema treatment, ensuring both efficacy and safety for patients.

global: Y

11:40am – 11:55am R **Evaluating the Safety and Efficacy of Vasopressin in Patients with Hemorrhagic Shock** Athena G

Presenters: Amanda Fisher

Evaluators: McKenzie Hodges, Blake Johnson

Title: Evaluating the Safety and Efficacy of Vasopressin in Patients with Hemorrhagic Shock

Authors: Amanda Fisher, Martin Gordon, Sarah Frye

Objective: Evaluate the safety and efficacy of vasopressin on blood and fluid requirements in hemorrhagic shock.

Self-Assessment Question: True or false: In this study, patients who received vasopressin had significantly lower requirements of blood products compared to those who did not receive vasopressin.

Background: Hemorrhagic shock is associated with a high rate of mortality in the first 24 hours following injury. Management includes stopping the bleeding, aggressive fluid resuscitation, and preventing hypotension. Complications of fluid resuscitation include increased bleeding, acute respiratory distress (ARDS), hemodilution, and hypothermia. There is controversy over whether early initiation of vasopressors can reduce fluid requirements and restore hemodynamics. Arginine vasopressin (AVP) is a neuropeptide that is secreted in response to hypotension by the posterior pituitary. It is essential in maintaining vasomotor tone in hypovolemic and septic shock, and secretion is associated with vasoconstriction. In hemorrhagic shock, patients are at risk of AVP deficiency in the first 48 hours of injury. While not currently recommended by the Advanced Trauma Life Support guidelines, vasopressors can be used when blood pressure is unable to be maintained despite volume resuscitation and are addressed in the European guidelines. This study is designed to compare vasopressin used adjunctly with a catecholamine vasopressor to a catecholamine vasopressor alone on the cumulative volume of blood products infused in a 48-hour period in trauma patients admitted with hemorrhagic shock.

Methods: This was a single center, retrospective, cohort study that evaluated the safety and efficacy of utilizing vasopressin with catecholamine vasopressors on the cumulative volume of blood products in patients with hemorrhagic shock. Included patients had a diagnosis of hemorrhagic shock, received catecholamine vasopressors, and were treated in an adult critical care unit from January 2020 to January 2024.Patients were excluded if they received CPR on arrival or immediately prior to hemorrhagic shock diagnosis, those with “do not resuscitate” orders at the time of diagnosis, and those who had hemorrhagic shock due to a gastrointestinal bleed. The primary outcome of the study was the cumulative volume of blood products infused within 48 hours after diagnosis of hemorrhagic shock. Secondary outcomes included cumulative volume of crystalloid fluids, total vasopressor requirements, ICU length of stay, and 30-day mortality.

Results: A total of 63 patients met inclusion criteria with 15 patients in the vasopressin group and 48 in the vasopressor only group. Patients in the vasopressin group received 10 units of blood compared to 12 units of blood in the vasopressor only group (p=0.846). Those in the vasopressin group had higher cumulative vasopressor requirements over a 48-hour period (12,621 mcg norepinephrine equivalents vs 240.5 mcg norepinephrine equivalents, p=0.002) and had a longer duration of mechanical ventilation compared to the vasopressor only group (4 days vs 2 days, p=0.023). There were no significant differences in cumulative fluid, 30-day mortality, ICU and hospital length of stays, and adverse events.

Conclusion: This study demonstrated that the use of vasopressin did not decrease the volume of blood products utilized in hemorrhagic shock patients; however, patients receiving vasopressin had higher vasopressor

requirements and required mechanical ventilation longer than those who received vasopressors alone.

global: Y

11:40am – 11:55am | **Clinical Outcomes in Patients who Receive Ertapenem vs. Meropenem for Extended Spectrum Beta-Lactamase Infections and Have Hypoalbuminemia** Athena A

Moderators: Brian Knott
Presenters: Kendall Ferrara
Evaluators: Cameron Lanier

Title: Clinical Outcomes in Patients who Receive Ertapenem vs. Meropenem for Extended Spectrum Beta-Lactamase Infections and Have Hypoalbuminemia

Authors: Kendall Ferrara, Melissa George, Joshua Rumph

Background: There are limited and conflicting data currently available for the treatment of ESBL infections in patients with hypoalbuminemia. The standard approach for patients with ESBL infections is treatment with a carbapenem. Ertapenem, compared to other carbapenems, is highly protein bound. In patients that are hypoalbuminemic and/or critically ill, this leads to an increased free fraction of ertapenem and a significantly decreased half-life. Limited clinical literature has shown a significantly increased risk of mortality, readmission, and length of stay in patients who are hypoalbuminemic and receive ertapenem compared to patients receiving other carbapenems. Based on this data, the Infectious Diseases Society of America (IDSA) Antimicrobial-Resistant (AMR) Guidance document suggests utilizing meropenem or imipenem-cilastatin in patients that are critically ill and/or experiencing hypoalbuminemia for ESBL infections outside of the urinary tract. Historically at East Carolina University (ECU) Health, ertapenem has been more commonly used than meropenem for ESBL infections regardless of clinical status or albumin. This study aims to evaluate the treatment failure of ertapenem compared to meropenem in patients who have ESBL infections and hypoalbuminemia.

Methods: This was a system-wide, retrospective chart review of hospitalized adult patients at ECU Health with hypoalbuminemia who received ertapenem or meropenem for at least 72 hours and had non-urine cultures positive for ESBL Enterobacterales. Hypoalbuminemia was defined as an albumin ≤2.5 g/dL within 72 hours before or after initiation of antibiotic treatment. SlicerDicer in EPIC and the electronic medical record (EHR) were utilized to identify patients. The primary endpoint was treatment failure defined as a composite of 30-day all-cause mortality and infection related readmission. Secondary outcomes included the individual components of the composite outcome, 90-day all-cause mortality and infection related readmission, and hospital length of stay (LOS). Subanalyses of patients with bacteremia and patients admitted to an intensive care unit (ICU) were also performed.

Results: A total of 156 patients with ESBL infections and hypoalbuminemia were included in the study. Of those included, 104 (66.7%) received ertapenem and 52 (33.3%) received meropenem. Overall, baseline characteristics were similar between groups. There was a statistically significant difference in age (70 vs 63 years old) and weight (78.1 vs 90.6 kg), however, these differences are not clinically significant and the difference in weight may be attributed to our institution’s previous rapid molecular blood culture protocol recommending meropenem in patients with a BMI ≥35 kg/m2. Although patients in the meropenem group had significantly lower albumin levels (2.1 g/dL vs 2.3 g/dL, p = 0.0131), this was not clinically significant. The most common type of culture in both groups was blood (57.7% vs 44.2%). Wound cultures were the second most common (18.3% vs 28.8%). ESBL Escherichia coli was the most frequently isolated organism in both groups (54.8% vs 40.4%). There was no statistically significant difference in the primary outcome of treatment failure between the ertapenem and meropenem groups (34.6% vs 46.2%, p = 0.1682; RR 0.75, 95% CI 0.505-1.113). Secondary outcomes, including 30- and 90-day all-cause mortality and infection-related readmission, also showed no significant differences. Subgroup analyses (ICU, age ≥65, bacteremia) revealed no significant differences but were limited by small sample sizes.

Conclusion: In patients with ESBL infections and hypoalbuminemia, there was no significant difference in treatment failure between ertapenem and meropenem. Although numerical differences favored ertapenem, the study was underpowered to detect a statistical significance. Larger, prospective studies are needed to confirm these findings.

Contact: Kendall.Ferrara@ecuhealth.org

global: Y

11:40am – 11:55am L **Pharmacist Impact on Inpatient Guideline-Directed Medical Therapy Prescribing in Heart Failure with Reduced Ejection Fraction** Parthenon 1

Moderators: Matt Conley
Presenters: Hayley Harrod-Meeks
Evaluators: Eric Marr

Title: Pharmacist Impact on Inpatient Guideline-Directed Medical Therapy Prescribing in Heart Failure with Reduced Ejection Fraction

Authors: Hayley Harrod-Meeks, Kyle Starling, Hunter McDowell

Objective: This project aimed to evaluate the impact of pharmacist intervention on inpatient prescribing of HFrEF GDMT at Atrium Health Navicent (AHN).

Self Assessment Question: True or False: Pharmacist intervention can increase inpatient prescribing of HFrEF GDMT?

Background: Heart failure with reduced ejection fraction (HFrEF) is a serious condition associated with high morbidity and mortality. The American Heart Association (AHA) guidelines recommend four classes of medications to reduce these risks: renin-angiotensin-aldosterone system (RAAS) inhibitors, beta blockers, mineralocorticoid receptor antagonists (MRAs), and sodium-glucose co-transporter 2 (SGLT-2) inhibitors. However, hesitancy to initiate or adjust these medications during hospitalization due to transient hypotension or acute kidney injury may worsen patient outcomes. We hypothesize that pharmacists play a key role in improving inpatient guideline-directed medical therapy (GDMT) prescribing.

Methods: This was a pre-post study that involved physician education and pharmacist intervention. Prior to the intervention period, a brief educational guide on HFrEF GDMT was provided to hospital physicians. During the intervention period, patient chart reviews were conducted to make appropriate recommendations to physicians and to determine outcomes. Patients were included in the analysis if they met all four of the following criteria: were 18 years-old or older, admitted to AHN, had an ejection fraction less than 40%, and had an EPIC-calculated readmission risk score of at least 20%. Key exclusion criteria included patients requiring renal replacement therapy at discharge or those who died during hospital admission. The primary outcome was the percentage of patients discharged on each eligible pillar of GDMT. Secondary outcomes included the percentage of patients discharged on each individual GDMT pillar and the percentage of patients readmitted to AHN within 30 days of discharge. Chi-square analysis was performed to assess differences in outcomes.

Results: In the intervention group, 24% of patients met the primary outcome while only 12% of baseline patients were discharged on all eligible GDMT pillars of HFrEF (P=0.023). Out of each medication class, the MRAs and SGLT-2 inhibitors were the least commonly prescribed in both groups. However, prescribing of both MRAs and SGLT-2 inhibitors was statistically higher in the intervention group, with a 16.3% increase in MRA prescribing (P=0.014) and a 14.6% increase in SGLT-2 inhibitor prescribing (P=0.031). Thirty-day readmission rates were reduced by 7.7% in the intervention group, though this was not statistically significant (P=0.244).

Conclusion: In this pre-post study, we found that pharmacist intervention can significantly increase inpatient HFrEF GDMT prescribing, especially by increasing the prescribing of MRAs and SGLT-2 inhibitors. 30-day readmission rates also trended down in the intervention group, though not significantly. Key limitations in this

study included physician turnover and hesitancy to change HFrEF regimens when an acute heart failure exacerbation was not the patient’s primary problem. Overall, this study showed that pharmacists play a key role in helping improve inpatient HFreF GDMT prescribing.

global: Y

11:40am – 11:55am L **PROTHROMBIN COMPLEX CONCENTRATE IN OBESE PATIENTS WITH FACTOR XA INIBITOR-ASSOCIATED BLEEDING** Parthenon 2

Moderators: Brook Jacobs
Presenters: Lam Ho
Evaluators: Erika Ingram

Title: Prothrombin complex concentrate in obese patients with factor Xa inhibitor-associated bleeding

Authors: Lam Ho, Alyssa Osmonson, John Michael Herndon, Jessica Starr

Objective: To evaluate the effectiveness of weight-based versus fixed-dose 4F-PCC for the reversal of factor Xa inhibitor-associated bleeding in obese patients

Self-Assessment Question: Based on the result of this study, patient receiving weight-based regimen developed more thrombotic event?

Background: Many studies have demonstrated the effectiveness of 4F-PCC in reversing anticoagulation and managing bleeding associated with factor Xa inhibitors; however, there is a lack of data to guide optimal dosing in obese patients. Specifically, the role of fixed-dosing in this population requires further exploration.

Methods: This a multicenter, retrospective cohort study conducted from January 2016 through April 2024. Electronic medical records of obese patients (BMI ≥30 kg/m²) receiving apixaban, rivaroxaban, or edoxaban who were treated with 4F-PCC were reviewed. Patients were included if they were ≥18 years of age and had major bleeding associated with factor Xa inhibitors. Major bleeding was defined as intracranial or critical-site hemorrhages, hemodynamic instability (SBP <90 mmHg, SBP drop >40 mmHg, HR >100 bpm), hemoglobin decrease >2 g/dL, or need for ≥2 PRBC units. Exclusion criteria included pregnant patients, and those transferred to an outside health system. The primary outcome is all-cause mortality. Secondary outcomes include hematoma expansion (≥6 mL or ≥33% increase), thromboembolic events, the need for a second 4F-PCC dose, and 48-hour transfusion requirements.

Results: Seventy-seven patients were included in the study. Mortality rates were 25% (n=12) in the fixed-dose group and 44.8% (n=13) in the weight-based group (p=0.0718). No thrombotic events were observed in either group. Two patients in the weight-based group required a second dose (p=0.0653). Transfusion within 48 hours was needed in 22.9% (n=11) of patients in the fixed-dose group and 20.1% (n=6) in the weight-based group (p=0.8194). Hematoma expansion occurred in one patient receiving weight-based dosing (p=0.5464).

Conclusions: This study found no difference in mortality between fixed-dose and weight-based dosing regimens. No thrombotic events were observed in either group. Larger studies are needed to evaluate the safety and efficacy of fixed-dose versus weight-based 4F-PCC for factor Xa inhibitors-associated bleeding in obese patients.

global: Y

11:40am – 11:55am M **A Retrospective Evaluation of an Electronic Medical Record Alert to Pharmacists on the Incidence of Inappropriate Medication Administration in Patients with Feeding Tubes** Athena C

Moderators: Devin Lavender
Presenters: Devin O'Brien
Evaluators: Crystal Wright

Title: A Retrospective Evaluation of an Electronic Medical Record Alert to Pharmacists on the Incidence of Inappropriate Medication Administration in Patients with Feeding Tubes

Authors: Devin O'Brien, Rosemary Garbowski, Matthew Lane, Saumil Vaghela

Background: Medication administration is an important part of the foundation for medication safety and efficacy. Various studies have demonstrated the frequency of inappropriate administration of medications through a feeding tube. Many of these studies have shown that pharmacist interventions can positively impact the percentage of medications administered appropriately in patients with feeding tubes. Few studies have evaluated the effectiveness of a pharmacist-directed alert on the appropriate administration of medications. The purpose of this study was to evaluate the effectiveness of an electronic medical record alert to pharmacists on the incidence of inappropriate medication administration in patients with feeding tubes.

Methods: A retrospective chart review was conducted using the electronic medical record (EMR) at an acute care community hospital. Chart reviews were conducted on patients with tube feeding (TF) orders who were admitted prior to and following implementation of the EMR alert. The pre-implementation period was between June 1, 2024 and August 31, 2024. The post-implementation period was between October 1, 2024 and December 31, 2024. A wash-out period was designated between September 1, 2024 and September 30, 2024 to ensure that all patients with a TF order triggered the alert to pharmacists in the EMR. Patients were included if they had a TF order placed and had at least one scheduled medication ordered to be administered enterally. Patients were excluded if they were covered by a service that participated in daily multidisciplinary team rounding, as the medications for these patients were individually evaluated regardless of the pharmacist-directed alert. The primary outcome for this study was the composite incidence of inappropriate medication administration and medication administration omissions in patients with feeding tubes (for example: crushed medications that should not be crushed per the package insert or a liquid administered through the feeding tube that has potential for binding to the feeding tube). The secondary outcome for this study was inappropriate administration of high risk medications. All data points collected for each patient were compiled in an electronic spreadsheet.

Results: A total of 52 patients were included in the study, 29 in the pre-implementation group and 23 in the post-implementation group. For the primary endpoint of composite incidence of inappropriate medication administration and medication administration omissions,122 errors were found in the pre-implementation group and 71 in the post-implementation group. For the secondary outcome of inappropriate administration of high risk medications, there were zero patients in both groups.

Conclusion: An EMR alert to pharmacists to evaluate medications in patients with feeding tubes may help to decrease the number of inappropriate medication administrations

global: Y

11:40am – 11:55am O **Assessing Utilization Trends of Granulocyte Colony-Stimulating Factors (G-CSF) in an Outpatient Cancer Setting** Olympia 2

Moderators: Schylar Cheyenne Hathaway
Presenters: Shayan Tavassoli
Evaluators: Lacey Ioppolo

Title: Assessing Utilization Trends of Granulocyte Colony-Stimulating Factors (G-CSF) in an Outpatient Cancer Setting

Authors: Shayan Tavassoli, Alexia Greene, Thomas Morris

Background: This study aims to identify gaps between current utilization and guideline recommendations by evaluating usage trends of granulocyte colony-stimulating factors at FirstHealth Outpatient Cancer Center. Previous literature showed that granulocyte colony-stimulating factors have shown both overuse and underuse when comparing to guideline recommendations.

Methods: A retrospective observational study was conducted to evaluate the use of granulocyte colony-stimulating factors in cancer patients at FirstHealth Outpatient Cancer Center between March 1, 2022, and March 30, 2024. The study included patients with active diagnoses of breast, lung, pancreatic, or colorectal cancer who received a dose of granulocyte colony-stimulating factors. Exclusion criteria applied to patients receiving secondary prophylaxis for febrile neutropenia, weekly chemotherapy cycles, investigational agents, or those who underwent bone marrow or hematopoietic transplants within 30 days of chemotherapy. Patient characteristics included age, gender, cancer type, chemotherapy regimen, absolute neutrophil count, creatinine clearance, bilirubin levels, and provider documentation related to granulocyte colony-stimulating factors use. Patients were classified into three risk groups—high, intermediate, and low—based on the risk of febrile neutropenia according to NCCN guidelines. The primary outcome looked to find the percentage of patients who received at least one dose of granulocyte colony-stimulating factors for primary prophylaxis of febrile neutropenia during their chemotherapy regimen for the treatment of either lung, pancreatic, breast, or colorectal cancer. The secondary outcome looked to evaluate the characteristic differences between patients who received granulocyte colony-stimulating factors and those who did not during the study period. All patient data has been stored in a password-protected file with access restricted to investigators, ensuring confidentiality and data security throughout the study.

Results: During the study's timeframe, 4% (214/4931) patients with either lung, pancreatic, colorectal, or breast cancer received granulocyte colony-stimulating factors. Individual baseline characteristics were evaluated in total for 50 patients who received granulocyte colony-stimulating factors and 44 patients who did not receive granulocyte colony-stimulating factors. In the treatment group, 28% (14/50) vs. 6.8% (3/44) patients would be categorized as intermediate risk factor for febrile neutropenia based on guideline recommendations, and 86% (12/14) in treatment group vs. 100% (3/3) in control group of patients with intermediate risk chemotherapy regimen had risk factors to consider adding granulocyte colony-stimulating factors.

Conclusions: Overall, granulocyte colony-stimulating factor usage aligned closely with NCCN guideline recommendations in this study. Intermediate risk groups require consideration from providers when deciding if granulocyte colony-stimulating factors are necessary based on patient characteristics. Limited sample size may require further research to determine significant gaps of granulocyte colony-stimulating factors in comparison to guideline recommendations.

global: Y