ALCALDE XXX

SOUTHWEST LEADERSHIP CONFERENCE
For Pharmacy Residents, Fellows & Preceptors

ABSTRACTS OF PLATFORM PRESENTATIONS
AMINOGLYCOSIDE PHARMACOKINETIC PREDICTORS OF CLINICAL SUCCESS IN CRITICALLY ILL HEMATOLOGIC MALIGNANCY PATIENTS WITH GRAM NEGATIVE BACTEREMIA. Emily J. McCleary, Jeff Bruno, Frank P. Tverdek, University of Texas MD Anderson Cancer Center, Houston, TX.

Purpose: To describe the relationship between aminoglycoside (AG) exposure (peak/MIC and AUC/MIC ratios) and clinical outcomes related to gram-negative bacteremia in critically ill hematologic malignancy (HM) patients. Empiric combination therapy with an AG and beta-lactam antibiotic is utilized in critically ill patients, especially in those with an impaired immune system. An AG peak/MIC ratio ≥ 10:1 is often targeted in an attempt to optimize clinical outcomes. However, this target has not been validated in the immunocompromised patient population or in the setting of higher AG MICs in the susceptible range.

Methods: This was a retrospective cohort study of all adult (≥18 years old) patients with HM admitted to the MD Anderson Cancer Center ICU between 8/1/2009 and 9/1/2015. Patients with gram negative bacteremia who received at least one dose of an IV AG either in the emergency center (while awaiting ICU transfer) or in the ICU and had two interpretable serum AG levels were included. The primary study outcome was to determine the relationship between AG peak/MIC ratio and clinical success. Clinical success was assessed 48 hours post dose and defined as absence of death, decreasing vasopressor dose, and absence of fever; fever could not recur between 48-72 hours post dose. Secondary outcomes included the relationship between AG AUC/MIC ratio and clinical success, the relationship between AG exposure and microbiological success, and the relationship between AG exposure and nephrotoxicity. Microbiological success was defined as documented clearance of bacteremia within 72 hours of AG dose. Nephrotoxicity was assessed during the 7 days after AG initiation and defined according to the RIFLE criteria.

Results: Fifty-one patients (median 58 years, IQR 36 – 66 years; 75% male) were included. The majority of patients (75%) had leukemia, 67% were actively receiving chemotherapy, and 84% were neutropenic. Baseline APACHEII scores were high with a median (IQR) of 25 (20-32). Sixty-nine percent of patients received amikacin, while 31% received tobramycin. Forty-five percent of gram negative isolates were E. coli, 33% Pseudomonas spp., 8% Klebsiella spp., 8% Enterobacter spp., and the remainder included Acinetobacter spp., Proteus spp., and other. Microbiological success was achieved in 71% of patients, 25% did not have follow up blood cultures, and 4% had microbiological failure. Further results are to be determined.

Conclusions: To be determined.


Purpose: There are limited epidemiologic data describing skin and soft tissue infections (SSTIs) in the United States (U.S.), specifically in regards to cost. Our primary objective was to identify national trends in the incidence and cost of adult, inpatient SSTIs in the U.S. from 2001-2012.

Methods: We used the National Inpatient Sample (NIS) from the Agency for Healthcare Research and Quality’s (AHRQ) Healthcare Cost and Utilization Project (HCUP) to identify hospital discharges for SSTIs in the U.S. from 2001-2012. Patients <18 years of age were excluded. ICD-9 codes were used to identify cases with a principal discharge diagnosis of SSTI (020.1, 021.0, 022.0, 031.1, 032.85, 039.0, 680-682, 684-686). Costs were adjusted to 2012 U.S. dollars using the medical consumer price index to determine inflation over time. Data weights were used to provide national estimates.

Results: Data analysis is ongoing with expected completion in March 2016.

Conclusion: Conclusions pending final data analysis.

CEFAZOLIN PLUS METRONIDAZOLE VERSUS CEFOTixin FOR THE PREVENTION OF SURGICAL SITE INFECTIONS IN ELECTIVE COLORECTAL SURGERY. Teri Hopkins, Theresa Jaso, Dusten Rose, Tamara Knight, Seton Healthcare Family, Austin, TX.

Purpose: Surgical site infections are a frequent complication of colorectal surgery (CRS), and are known to contribute to increased mortality and hospital readmissions. With increasing concern for antibiotic resistance, it is important to consider local susceptibility trends in addition to published treatment guidelines when selecting an antibiotic regimen for perioperative prophylaxis. National susceptibilities indicate increased Bacteroides fragilis group resistance to many first-line antibiotics used for perioperative prophylaxis, particularly with cefoxitin. The objective of this study is to determine if there is a difference in outcomes in patients receiving prophylaxis with cefazolin plus metronidazole versus cefoxitin for elective CRS.

Methods: This is a retrospective, non-inferiority, cohort study comparing outcomes of patients who received cefazolin plus metronidazole versus cefoxitin for perioperative elective CRS prophylaxis. The study was approved by the Institutional Review Board. Patients at least 18 years of age who received at least one dose of antimicrobial prophylaxis with cefazolin plus metronidazole or cefoxitin for elective colorectal surgery will be included. Exclusion criteria are emergency colorectal surgery, revision of previous colorectal surgery, bacterial infection at the time of procedure, perforation during surgery, antimicrobial therapy within one week prior to procedure, patients greater than 89 years of age and pregnancy. Data will be collected in five categories:
demographics, patient-dependent variables, surgical variables, treatment, and outcomes. The primary outcome is the incidence of surgical site infections within 30 days after surgery. Secondary outcomes include incidence of Clostridium difficile infection and incidence of secondary bloodstream infection. The primary and secondary outcomes will be analyzed using a Pearson chi-square test. A multivariable logistic regression analysis will be used to determine independent predictors of surgical site infections.

**RESULTS:** To be presented at Alcaldé Southwest Leadership Conference.

**CONCLUSION:** To be presented at Alcaldé Southwest Leadership Conference.

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**PL I-4**

**EVALUATION OF OPTIMIZED CEFEPIME DOSING BASED ON MIC AND CLINICAL OUTCOMES IN PATIENTS WITH BLOODSTREAM INFECTIONS CAUSED BY GRAM-NEGATIVE BACILLI.** Aloreza Fakhriravari, Gerard Gawrys, Jason M. Kota, University of the Incarnate Word, Feik School of Pharmacy, San Antonio, TX.

**PURPOSE:** In 2014, CLSI lowered cefepime breakpoints for Enterobacteriaceae and introduced the susceptible dose-dependent (SDD) category to prevent clinical failure due to suboptimized dosing based on MIC. The objective of this study was to evaluate clinical outcomes in patients with gram-negative bacteremia receiving optimized compared to suboptimized cefepime dosing based on MIC.

**METHODS:** We retrospectively reviewed patients with gram-negative bacteremias from 2008 through 2013 at San Antonio Military Medical Center (SAMMC) and from 2014 through 2015 at Methodist Hospital in San Antonio to compare outcomes in patients who received optimized versus suboptimized cefepime doses. Cohort assignment was based on cefepime MIC, renal function, and body weight. The primary outcome was in-hospital 30-day mortality. Secondary outcomes were hospital and ICU length of stay. A multivariable logistic regression model was used to identify independent risk factors for in-hospital 30-day mortality. Chi-square test and Mann-Whitney U test were used for dichotomous and continuous variables, as appropriate.

**RESULTS:** The study included 129 patients, 42 from SAMMC and 87 from Methodist Hospital. The median (interquartile range) age was 65 years (47-74 years), weight 78 kg (65-89 kg), and eGFR 74 mL/min (47-121 mL/min). Among patients included, 10% had burn injury, 48% were female, and 32% were in the ICU. The average hospital duration was 23±27 days and ICU duration was 7±19 days. Escherichia coli (34%), Klebsiella pneumoniae (23%), Pseudomonas aeruginosa (14%), and Serratia marcescens (8%) were most common. There were 104 patients assigned to the optimized and 25 to the suboptimal cohort. A total of 12 patients died, 2 of whom were in the suboptimal cohort. There were no statistically significant differences between the cohorts in the primary outcome (p=1.00), hospital length of stay (p=0.30), or ICU length of stay (p=0.50). Multivariable logistic regression analysis did not identify any patient characteristics associated with worse outcomes.

**CONCLUSIONS:** We found no differences in clinical outcomes in patients receiving optimized versus suboptimal cefepime doses for gram-negative bacteremias.

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**PL I-5**

**TREATMENTS THAT IMPACT OUTCOMES IN SEPSIS WITH UNDERLYING CIRRHOSIS (TRI-STUDY) IMPACT OF ANTIMICROBIAL REGIMENS ON PATIENT OUTCOMES.** Lauren Adams, Steven Pass., Veteran’s Affairs North Texas Health Care System and Texas Tech University School of Pharmacy, Dallas, Texas.

**Background:** Cirrhosis is a chronic liver disorder which may ultimately progress to liver failure. Studies have shown that patients with cirrhosis have an increased risk of developing sepsis, respiratory failure, sepsis related mortality, and death from acute respiratory failure. A bacterial infection occurs in an estimated 34-38% of cirrhotic patients and is one of the most frequent complications of cirrhosis. In addition, patients with cirrhosis and an infection have a 15% increase in hospital mortality, which is double the risk of patients with cirrhosis and no infection. More importantly, infections are responsible for 30-50% of deaths in patients with cirrhosis.

One retrospective cohort study found that patients with septic shock and SBP had an overall hospital mortality of 81.8%. This study also found that for every hour appropriate antimicrobial therapy was delayed, mortality was increased 1.86 times. Another study found that suboptimal empiric antimicrobial therapy was started in 24.4% of patients. The authors concluded that the delay in appropriate antimicrobial therapy resulted in an increase in mortality. The purpose of this study is to help determine an optimal empiric antimicrobial regimen in patients with sepsis and cirrhosis.

**Purpose:** To look at factors that influence outcomes of infections in septic patients with cirrhosis.

**Methods:** This is a single-center, retrospective chart review of patients diagnosed with sepsis and cirrhosis within the VA North Texas Health Care System. Patients who were between the ages of 18 and 89, had a history of cirrhosis, a diagnosis of sepsis, and were admitted to the hospital between January 1, 2013 and June 30, 2015 were included in this study. Patients’ baseline demographics, pertinent laboratory values, medications, and diagnostic tests were collected. The primary endpoint was all-cause mortality, and the secondary endpoint was adequate antimicrobial selection.

**Results:** Retrospective data collection is ongoing.

**Conclusions:** Conclusions to be presented following data collection.

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**PL I-6**

**VANCOMYCIN IN THE SEVERELY OBSE: A PROTOCOL BASED COMPARISON OF TOTAL VS. ADJUSTED BODY WEIGHT DOSING.** Andrew Johnson, Terri Smith, Andrew Faust, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

**PURPOSE:** To evaluate the impact of a revised vancomycin protocol that recommends the use of adjusted body weight for maintenance dosing in severely obese patients.

**METHODS:** A retrospective chart review was conducted on adult patients with a BMI ≥ 35kg/m² who received vancomycin and had at least one steady state trough concentration. A revised institutional protocol that recommends the use of adjusted body weight for
maintenance dosing in this population was adopted on November 1, 2015. Patients who received vancomycin between November 1, 2014 and December 31, 2014 were compared to patients who received vancomycin between November 1, 2015 and December 31, 2015. Exclusion criteria were pregnancy, vancomycin prior to admission, renal dysfunction, mistimed troughs, mistimed doses, and deviation from protocol. The primary outcome was the percentage of patients who achieved therapeutic vancomycin trough concentrations at steady state. The therapeutic range was considered 10-15 mcg/mL or 15-20 mcg/mL, depending on indication.

RESULTS: A total of 1055 patients were screened with 57 ultimately being included. Twenty-three patients from the 2014 group (dosed on total body weight) were compared to 34 patients from the 2015 group (dosed on adjusted body weight). Steady state vancomycin trough concentrations were therapeutic in 7 (30.4%) patients in the 2014 group compared to 19 (55.6%) patients in the 2015 group (p = 0.11). There were significantly more supratherapeutic levels in the 2014 group (47.8% vs. 17.6%; p = 0.02). The number of subtherapeutic levels was not different between the two groups (21.7% vs. 26.5%; p = 0.76).

CONCLUSION: Use of an adjusted body weight based dosing protocol was associated with a reduction in supratherapeutic vancomycin levels. However, the percentage of therapeutic troughs was not statistically different between the two groups.

PL 1-7
EVALUATING THE MANAGEMENT OF CANDIDEMIA AT FOUR COMMUNITY HOSPITALS: A COMPARISON OF MICAFUNGIN VERSUS FLUCONAZOLE. Lori D. Watkins, Gerard Gawrys, Methodist Hospital, San Antonio, TX.

PURPOSE: To retrospectively compare the efficacy of micafungin versus fluconazole for both the targeted and empiric treatment of candidemia in hospitalized patients. Recent data suggests targeted echinocandin therapy is possibly associated with better outcomes even in azole-sensitive candida isolates.

METHODS: Utilizing a software called Vigilanz, data has been retrospectively collected via Meditech from four hospitals to evaluate time to microbiological clearance (defined as the eradication of candida species present at baseline as determined by follow-up culture) and documented clinical improvement (defined as the cessation of fever and improvement of leukocytosis).

RESULTS: Retrospective data pulled from January 2014 to December 2015 revealed one-hundred and eight patients with candidemia and is currently being analyzed.

CONCLUSION: The conclusion will be based on the final data analysis.

PL 1-8
EVALUATION OF OUTCOMES ASSOCIATED WITH TREATED VERSUSUNTREATED ASYMPTOMATIC CANDIDURIA IN A TERTIARY MEDICAL CENTER. Sarah M. El-Rachidi, Cynthia Nguyen, Julius Li, Ochsner Medical Center, New Orleans, LA.

PURPOSE: To assess whether treatment with antifungal agents provides any clinical benefit in hospitalized patients with asymptomatic candiduria.

METHODS: We conducted a retrospective chart review comparing the clinical outcomes between treated versus untreated low-risk, non-neutropenic patients with asymptomatic candiduria at Ochsner Medical Center. The primary outcome was the 4-week mycological eradication rate between patients who received antifungal treatment compared to those who did not. Secondary outcomes were to compare subsequent rates of symptomatic UTI within 30 days, rate of invasive candidiasis, medication adverse events, hospital length of stay, and 30 day-all cause mortality among the two patient groups.

RESULTS: CONCLUSION: TBD

PL 1-9
USE OF PROBIOTICS IN THE PREVENTION OF CLOSTRIDIUM DIFFICILE INFECTION ASSOCIATED WITH BROAD-SPECTRUM ANTIBIOTICS. Courtney Wong, Hsienchang Thomas Chiu, Robert Portinari, Jenny Bui, UT Southwestern Medical Center, Dallas, Texas.

PURPOSE: Clostridium difficile infections (CDI) remain a serious problem for healthcare institutions, especially in those patients who are on broad-spectrum antibiotics, occurring in up to 25% of this population. This has led to greater concerns regarding patient safety and rising medical treatment costs associated with the prescription of broad-spectrum antibiotics. There has been increasing speculations that probiotics may hold a benefit in preventing the occurrence of CDI during and after antibiotic treatment. The main objective of this study is to determine the efficacy of a probiotic that contains Lactobacillus GG in the prevention of CDI associated with broad-spectrum antibiotic use.

METHODS: This randomized, prospective, open-label pilot study will include up to 50 hospitalized patients at UT Southwestern Medical Center. Patients who meet the inclusion and exclusion criteria of this study will be identified via review of the hospital’s electronic medical records. Patients 18 years of age or older who provide informed consent will be enrolled if they are prescribed either a fluoroquinolone, beta-lactam, macrolide, clindamycin, or two or more antibiotics. Excluded are patients with a history of bone marrow transplant, neutropenia, mucositis, CDI upon admission, total parenteral nutrition, and empiric treatment for CDI (intravenous/oral metronidazole or oral vancomycin). Patients will receive either a prophylactic probiotic (Culturelle) capsule twice daily or no treatment. For patients randomized to the prophylactic probiotic group, probiotic therapy will begin within 72 hours from the initiation of the selected antibiotics and will continue until 72 hours after all antibiotics have been discontinued or
until the patient is discharged. The following data will be collected from the patient’s electronic medical chart: presence of CDI confirmed via C. difficile toxin polymerase chain reaction (PCR), time to onset of CDI, specific antibiotics used, duration of antibiotics used, duration of probiotic or placebo, presence of diarrhea, time to onset of diarrhea, and history of prior CDI infection. The primary outcome will be the incidence of CDI between the probiotic group and placebo group. Secondary outcomes will include time to onset of CDI, incidence of diarrhea, and time to onset of diarrhea between the two groups. This research study has been approved by the Institutional Review Board at UT Southwestern Medical Center.

RESULTS: Research in progress

CONCLUSION: Research in progress. Our hypothesis is that probiotics will significantly reduce the incidence of CDI compared to placebo in patients on broad-spectrum antibiotics.

PL II-1

PRESCRIBING PRACTICES FOR COMMUNITY-ACQUIRED PNEUMONIA IN A LARGE OUTPATIENT PRACTICE: IDENTIFYING OPPORTUNITIES FOR ANTIMICROBIAL STEWARDSHIP. Kaci Thiessen, Ann Lloyd, Michael J. Miller, Juell Homeco, Katherine O’Neal, Brooke Gildon, University of Oklahoma-Tulsa College of Pharmacy, Tulsa, OK.

PURPOSE: This study will: (1) describe antibiotic prescribing practices for community-acquired pneumonia (CAP) in the outpatient setting; (2) assess concordance with current treatment guidelines for CAP; and (3) describe additional clinical factors considered when making a treatment decision. The outcomes of the study will inform development of interventions to improve antibiotic stewardship in the outpatient practice setting.

METHODS: This cross-sectional, descriptive study used historical data from patient records within OU Physicians-Tulsa clinics from July 1, 2014 to June 30, 2015, with a 90 day lookback period before July 1 and a 30 day follow-up period after June 30. Patients were identified using ICD-9-CM codes 480.x-487.x at the date of index visit. Descriptive statistics were used to profile the study sample with respect to patient age, race, gender, allergies, and primary diagnosis at index visit (ICD-9-CM code). For specific aim 1, the frequency and proportion of each antibiotic prescribed along with its dosage, dosing schedule, and duration of treatment will be reported. For specific aim 2, each antibiotic regimen will be classified as concordant/not concordant with the Infectious Disease Society of America guideline. The frequency and proportion of patients with a concordant regimen will be described by individual components of the regimen, including drug, dose, frequency, and duration, and as a composite. Results will be reported overall and by patient subgroups with or without underlying comorbidities.

RESULTS: Preliminary analyses identified a total of 146 episodes of community-acquired pneumonia in 144 patients during the observation period. All 146 episodes were retained and treated as unique because of different diagnosis or extended time interval between episodes. The analytical sample had a mean age of 48 years. Two-thirds (67%) of the sample was female; 58% was white and 23% was black; one-third (31%) of episodes were definitively coded as a viral diagnosis. Of the viral cases, 4% were prescribed an antibiotic. Of the nonviral cases approximately 50% were prescribed an antibiotic. Quinolones were most commonly prescribed, followed by macrolides. Data analysis is ongoing.

CONCLUSION: Results of this study will further inform development of an antimicrobial stewardship program in the outpatient practice setting.

PL II-2

IMPACT OF A PHARMACIST-LED VANCOMYCIN DOSING AND MONITORING SERVICE AT AN ACADEMIC MEDICAL CENTER. Kiya Harrison, Pharm.D., Winter Smith, Pharm.D., Katherine Kupiec, Pharm.D., Shellie Keast, Pharm.D., and Karen Kinney, M.D. University of Oklahoma College of Pharmacy and OU Medical Center.

Background: Methicillin-resistant Staphylococcus aureus (MRSA) infections have become increasingly prevalent in both community and healthcare settings. Vancomycin is a common antimicrobial agent used to treat severe infections caused by MRSA. Appropriate dosing and therapeutic drug monitoring may maximize efficacy and minimize the risk for toxicity. Therapeutic drug monitoring and dosing by pharmacists have been implemented at many institutions to improve safety and efficacy outcomes of vancomycin therapy. Guidelines from the Infectious Diseases Society of America (IDSA) state that vancomycin loading doses may be considered for complicated infections; and, there is evidence demonstrating a more rapid attainment of target trough concentrations when loading doses are incorporated into a vancomycin dosing protocol. The purpose of this study is to compare outcomes in adult patients on vancomycin therapy before and after implementation of a pharmacy-to-dose (PTD) vancomycin protocol that incorporates loading doses. The outcomes of this study will likely reflect the impact of pharmacist dosing as well as the use of loading doses to reach higher trough goals.

Objectives: The primary objective of this study is to compare patients’ time to therapeutic trough (measured in days) before and after implementation of a vancomycin PTD protocol. Secondary objectives include total days of vancomycin therapy, incidence of nephrotoxicity, number of mistimed troughs, number of troughs above 20 mg/L, number of troughs below 10 mg/L, and hospital length of stay. Additionally, a MRSA bacteremia subset will be evaluated for time to negative blood culture and in-hospital mortality.

Methods: This is a retrospective, pre/post intervention study conducted at a 350-bed academic medical center. This study will include adult patients who have received vancomycin therapy for at least 72 hours. Patients with end-stage renal disease undergoing intermittent hemodialysis will be excluded. Patients who received vancomycin prior to implementing the PTD protocol between August 2013 and October 2013 will serve as the pre-intervention group. Patients whose vancomycin was managed via the PTD protocol between August 2015 and October 2015 will serve as the post-intervention group. Descriptive statistics and hypothesis tests will be used to summarize the primary and secondary outcomes. A Cox proportional hazard model will be used to evaluate time to therapeutic trough, length of stay, time to negative blood
culture, and total length of vancomycin therapy. Multivariable regression analyses may be used on select outcomes to further review differences between groups while controlling for other patient-related factors.

Results/Conclusion: In progress

PL II-3
EVALUATION OF PROCALCITONIN FOR ANTIBIOTIC STREAMLINING IN CRITICALLY ILL PATIENTS. Jennifer Tran, Ilka Ratsaphanngthong, Matthew Crotty. Methodist Dallas Medical Center, Dallas, TX.

Background: Severe sepsis and septic shock are leading causes of death in the hospital setting. The Surviving Sepsis Guidelines recommend the initiation of empiric antibiotics within one hour of identification of sepsis in order to optimize care of the septic patient. Increasing use of empiric antibiotics raises concern for increased risk of antibiotic resistance and hospital costs. Procalcitonin (PCT), the precursor of the hormone calcitonin, has been investigated and shown potential as a specific biomarker for detecting bacterial infections. Several studies have concluded that PCT could be used to help in the decision for discontinuation of antibiotics in the setting of severe sepsis in critically ill patients. Based on data in severe sepsis and septic shock, higher PCT cutoffs for ICU sepsis patients may be warranted to help determine the likelihood of bacterial infections and to assist in appropriate antibiotic escalation and de-escalation.

Objective: The purpose of the study is to evaluate the use of PCT for antibiotic streamlining in critically ill patients treated for sepsis as long-term use of antibiotics inappropriately could lead to increased resistance and costs.

Methods: This is a retrospective, cohort analysis of patients admitted to the ICU from June 1st, 2010 to June 31st, 2015 with ICD-9 diagnosis codes for severe sepsis or septic shock. Follow-up PCT levels will be evaluated based on the provided clinical decision algorithm and used in adjunct to clinical judgment for escalation or de-escalation of antibiotics. Streamlining of antibiotics will be trended with a ranking system based on antibiotic spectrum (i.e. narrow, broad, extended, restricted) and results will be compared between the Pre- and Post-PCT groups. Patient demographics, laboratory data, culture results, and details about length of stay and duration of therapy will be collected.

Results: An interim analysis of 21 patients was performed. In the Pre-PCT group (n=6), patients had a mean age of 70 years old with a SAPS II score of 32.5. 50% of patients were streamlined based on cultures and sensitivities and clinical picture. In the Post-PCT group (n=15), patients had a mean age of 64 years old with a SAPS II score of 34.9. Forty-six PCT levels were drawn. 80% of patients (n=12) had no changes in streamlining based on drawn PCT levels while 20% of patients (n=3) had de-escalation of antibiotics based on a combination of reduced PCT levels and culture results (p = 0.17). However, 2 of these patients had antibiotics restarted within 7 days of de-escalation.

Conclusions: Based on the interim analysis, there was no difference in antibiotic streamlining based on PCT levels used in adjunct to clinical judgment. Final data analysis, results, and conclusions are currently in progress.

Disclosure: All authors have nothing to disclose

PL II-4
AN OUTCOME EVALUATION OF A STANDARDIZED COMPUTERIZED PHYSICIAN ORDER SET FOR THE MANAGEMENT OF CLOSTRIDIUM DIFFICILE COLITIS IN A TEACHING TERTIARY CARE FACILITY. Linda Nwachukwu, Zachary Mulkey, Courtney Armstrong, Charles F. Seifert, Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

Background: Clostridium difficile infection (CDI) continues to be the leading cause of healthcare-associated infectious colitis in the United States. Even with recent guidelines such as that published by the Infectious Disease Society of America (IDSA) or the American College of Gastroenterology (ACG) in 2010 and 2013, respectively, and studies such as Brown and Seifert, demonstrating the importance of adhering to guideline recommendations, few clinicians comply with recommendations thus resulting in fewer patients adequately evaluated and treated. There are limited studies that determine whether a standardized computerized physician order set for the management of clostridium difficile colitis could improve patient management as recommended by the guidelines.

Methods: The main objective of this study was to investigate if implementation of a standardized physician order set for CDI could improve patient management and outcome as recommended by the recent guidelines. To achieve these objectives, a retrospective case-control study of hospitalized adults, between the age of 18 and 89 years, with C. difficile infection presenting to a 454 bed tertiary care referral county teaching hospital was conducted after the implementation of a CDI order set or protocol. Patients were identified using ICD-9 and ICD-10 codes. The main outcomes include cure rate, and complication rates (death, infection recurrence, toxic megacolon and surgery) of patients with C. difficile infection after the implementation of the protocol. Bivariate analysis was done using student t-tests and chi-square tests. To examine the predictive factors of hospital mortality and complications, multivariable logistic and linear regression models were used respectively.

Results: Data collection currently in progress

Conclusions: Pending

Disclosure: All authors have nothing to disclose

PL II-5
TREATMENTS THAT IMPACT OUTCOMES IN SEPSIS WITH UNDERLYING CIRRHOSIS (TRIOS-C STUDY). Krystal K. Haase, Steven Pass, nephly Samuel, Maegan M. Patterson, Lauren N. Adams, Charles F. Seifert. Texas Tech University Health Science Center School of Pharmacy, Lubbock, TX.

BACKGROUND: In cirrhotic patients, severe sepsis can precipitate splanchnic vaso dilatation, decrease effective arterial volume, and exacerbate renal vasoconstriction leading to type-1 hepatorenal syndrome (HRS). It is well known that the combination of sepsis and acute kidney injury in patients without cirrhosis indicates a poor prognosis. Despite advances in care, the in-hospital mortality rate remains excessive in patients with type 1 HRS (75%). The current standard of therapy for type-1 HRS consists of the administration of a vasoconstrictor together with albumin. However, studies looking at this combination
have excluded patients with an infection or signs of systemic inflammatory response. Due to limited data in this population, further investigation is warranted to determine the best treatment approach in patients with type-1 HRS and severe sepsis.

PURPOSE: The purpose of this study is to identify specific prognostic and treatment factors that are associated with improved outcomes in septic patients with cirrhosis and acute kidney injury. The primary objective is to determine specific treatment patterns associated with improvements in all-cause hospital mortality. This study will look specifically at renal impairment treatment modalities.

METHODS: This study is a retrospective multi-center chart review conducted at Northwest Texas Healthcare System, Amarillo, Texas, VA North Texas Healthcare System, Dallas, Texas and University Medical Center, Lubbock, Texas. The study included patients aged 18 to 89 years old with a diagnosis of cirrhosis complicated by sepsis admitted to one of the aforementioned facilities who met eligibility criteria. Eligible subjects will be selected through a query of inpatient medical records between July 1, 2010 and June 30, 2015. ICD-9 codes will be utilized to identify subjects for recruitment and data will be collected through manual chart review.

RESULTS: Data collection in progress

CONCLUSION: Pending.

PL II-6

PURPOSE: According to the Patient Access to Pharmacists’ Care Coalition, “Enabling pharmacists to practice at the top of their education and training, and be better integrated into the patient’s health care team, will improve health outcomes...”. At our medical center, it was uncertain how a new pharmacist staffing model was impacting the provision of patient care. This study’s objective is to compare outcomes prior to and following the implementation of a new patient-centered pharmacist staffing model.

METHODS: A quasi-experimental quality improvement study was conducted to determine the impact of a new pharmacist staffing model on patients discharged from a large academic medical center. Patients were divided into two groups: a pre-implementation group (Group A: patients discharged between May 1, 2015 and July 31, 2015) and a post-implementation group (Group B: patients discharged between September 1, 2015 and November 30, 2015). A one-month washout period was allowed following the model implementation on August 2, 2015. Retrospectively collected data included documented moderate and severe interventions by pharmacists, pharmacy scorecard evaluation in Epic, discharge counseling capture rate, 30-day readmission rates, and readmission length of stay. Data is being analyzed for statistical difference between the two study groups. Additionally, the effects on Emergency Department process measures were assessed following implementation due to a necessitated temporary reduction of pharmacy services in that area.

RESULTS: An evaluation of 876 patients with LACE scores of ≥ 9 was conducted. The documented discharge counseling capture rate following staffing model implementation was more than double the rate prior to implementation. Documented moderate-serious medication interventions were not statistically different following model implementation (p = 0.62). Readmission data is pending. In the emergency department, approximately 14,000 patients were seen during the study period. Following temporary reduction of services, documented moderate-serious interventions decreased from approximately 0.22 interventions per patient to less than 0.01 per patient, though this was not statistically significant (p = 0.67). Discharge counseling was found to be poorly performed and/or documented prior to service reduction at 0.29% and ceasing entirely following the reduction.

CONCLUSION: Based on resulted data, the new patient-centered pharmacist staffing model does permit increased discharge counseling capture rate for high-risk patients, despite staffing shortages at implementation, but has resulted in no change in documented interventions. Readmissions data are pending. Temporary staffing reduction in the Emergency Department resulted in reduced documented medication interventions with no impact on discharge counseling.

PL II-7
ESTIMATED FINANCIAL BENEFIT OF OPENING A HOSPITAL-OWNED OUTPATIENT PHARMACY. Zinkeng Asonganyi, Jon Albrecht, Methodist Dallas Medical Center, Dallas, TX.

PURPOSE: At Methodist Dallas Medical Center (MDMC), outpatient pharmacy (OP) services are outsourced to a vendor, who leases space on campus. There is a meds-to-beds program in place but it has limitations. As health systems are continuously challenged to identify new sources of revenue while providing high quality patient care, an ambulatory care footprint is vital. OP services, when properly integrated with hospital discharge procedures, can reduce one of the leading causes of hospital readmissions: patient failure to fill their prescriptions. The objective of this case study is to estimate the benefits of opening a wholly owned outpatient pharmacy.

METHODS: Pharmacy leadership recognized we have the expertise, but needed resources to successfully produce a finished product. Partnering with a vendor, who has a history of leading and executing such projects will help us meet the organization’s goal of having a ready to use OP in a year’s timeframe. Pertinent data about MDMC was provided to the vendors. Initial prescription capture rate of about 139 per day was assumed based on the current volume from Walgreens on-site pharmacy. Each vendor built a high level proforma highlighting the capital investment required, ongoing operating expense to be incurred, and the return on investment (ROI). After reviewing each initial proforma, a more refined proforma will be made to tailor to the scope and the size of our OP. The estimates on each proforma were meant to be conservative. MDMC leadership will choose a vendor after analyzing the assumptions made, their ability to execute the project successfully, implementation services provided, and consultant costs.
RESULTS: A high level proforma was received from 3 vendors and reviewed. Senior leadership’s decision to choose one vendor over the other was largely based on prior experience successfully executing such a task. The following was projected:

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<td>$6,569,949</td>
<td>$6,510,514</td>
<td>$7,644,55</td>
</tr>
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CONCLUSION: Based on the above projections, MDMC should realize a positive cash flow at year 3 and break even on its initial investment by year 4. Implementation of outpatient pharmacy in a hospital can be an important revenue stream for a health system while improving patient and employee satisfaction. A clear business plan and financial return on investment projection are essential for hospital administration approval.

PL II-8 EVALUATING COST SAVINGS AND PATIENT BENEFIT FROM THE 340B DRUG PRICING PROGRAM THROUGH EXPANSION OF PEDIATRIC OUTPATIENT PHARMACY SERVICES. Abhay S. Patel, Jeffrey L. Wagner, Jamie J. Choi, Jennifer G. McCarthy, Rosa I. Lopez, Julianna M. Fernandez, Larry H. Hollier, Texas Children’s Hospital, Houston, TX.

PURPOSE: The 340B Drug Pricing Program was established in 1992 for covered entities to stretch Federal resources and provide eligible patients with comprehensive services. Pediatric hospitals were recognized as eligible for the 340B program in 2006. There are limited reports on expanding access to pharmacy services and the value of cost savings and patient benefit. The primary objective of this study was to develop, operationalize, and implement the acceptance of prescriptions for patients a pediatric outpatient same-day surgery unit who were covered by commercial payers, and to evaluate the related cost savings from the 340B Program.

METHODS: This retrospective, descriptive study is pending approval by the Institutional Review Board. Patients receiving care within the outpatient same-day surgery unit that were discharged with prescriptions were eligible for inclusion. Reports for all outpatient prescriptions written from same-day surgery and for all outpatient units were collected for a period of 3 months before and after implementation. Reports included prescribed medications, dose, quantity, mode of transmission, and prescription count for those captured by the pharmacy. Data was aggregated to determine prescription capture rate and pharmacy workload. For same-day surgery prescriptions captured by the pharmacy, 340B product pricing was compared to Wholesale Acquisition Cost (WAC) pricing in order to determine the primary outcome of overall cost savings from insurance expansion. Reimbursement data from adjudicated prescriptions was averaged and applied in determining margin for each drug purchased. For secondary outcomes, patient benefit was assessed by administration of a pre-/post-questionnaire to caregivers during their visit. Drug pricing for captured prescriptions was compared to true pharmacy cost for the same prescription quantities from a non-340B covered entity within the organization to appraise the value of cost savings through field comparison.

RESULTS: Pending

CONCLUSION: Pending

PL II-9 INVESTIGATION OF METHODS OF MEDICATION ADMINISTRATION USING THE THEORY OF PLANNED BEHAVIOR. Joseph Rogers, Joyce Tipton, Angela Ward, Memorial Hermann Health System, Houston, TX; Paige Pitman, Kevin Garey, University of Houston College of Pharmacy, Houston, TX.

PURPOSE: 1. To determine the behavioral intention of administering providers at the study hospital to remove medications from an automated dispensing cabinet (ADC) one patient at a time, i.e. removing medications from an ADC for one patient, administering them, and then returning to the ADC for the next patient’s medications. 2. To identify modifiable factors that will strengthen their intention and support of the removal and administration of medications one patient at a time. At the study hospital, observational findings have demonstrated that one patient at a time is currently the least used method of administration.

METHODS: The Theory of Planned Behavior (TPB) was used to develop an elicitation study and survey questionnaire to understand the behavioral intention of administering providers at a 400 bed community hospital.

RESULTS: The survey was sent to 800 nurses and respiratory therapists at the study site. The survey consisted of 15 Likert-style questions to assess the survey population’s intention, attitude, subjective norm, and perceived behavioral control regarding removing medications from an ADC one patient at a time. 365 responses were received. Pending analysis, descriptive statistics such as frequencies, means, and standard deviations will be performed when appropriate. Cronbach’s alpha will be used for reliability testing. Subgroup analyses will be performed based on service area, provider type, and years in profession.

CONCLUSION: The information gained from this study will provide insight into the driving factors around the current practice for medication administration at the study site. This information can then be used to influence future practice change.

PL III-1 POTASSIUM DEFICIT ESTIMATION IN CRITICALLY ILL HOSPITALIZED ADULTS. Taryn Bainum, Krystal Haase, Kenna Payne, Dan Galvan, Ariel Santos, Shane Harper, Texas Tech University Health Sciences Center School of Pharmacy and Texas Tech Health Sciences Center School of Medicine, Amarillo, TX.

BACKGROUND: Electrolyte abnormalities are a common issue experienced by critically ill hospitalized patients. Electrolytes play a vital role in a variety of metabolic processes and therefore fluctuations in their levels can
cause serious adverse events. Potassium is of particular interest in patients admitted to the intensive care unit (ICU) as several aspects of medical care can affect potassium homeostasis. There are several methods used to estimate potassium deficits in hospitalized patients, however there is limited data evaluating these in the critically-ill population. There remains a need for an accurate, convenient method of estimating potassium replacement needs in this population where hypokalemia is frequent and the risk for complications is high.

**PURPOSE:** The primary objective is to determine the accuracy of current potassium replacement estimations in critically ill hospitalized adults. Secondary objectives include determining the degree to which treatment- and/or patient-specific characteristics affect the change in serum potassium levels and replacement requirements, contrasting actual prescribed potassium compared to quantities calculated by current deficit estimations, estimating the magnitude of daily potassium losses in a critically-ill population, and developing a more accurate equation to determine potassium requirements in this population.

**METHODS:** This is a retrospective cohort study of adult subjects admitted to two tertiary care hospital intensive care units between January 1, 2015 and December 31, 2015. Records will be screened for patients with hypokalemia during the first 3 calendar days of admission. Patients meeting inclusion criteria will be chosen from ICU admissions moving backwards from the most recent discharge until a target accrual of 200 patients is met. Baseline demographics, primary endpoints, and covariates are being collected through manual record review. Descriptive statistics will be used to compare demographic information and baseline characteristics. Continuous data will be analyzed using Spearman Rank Coefficient to determine association. Nominal data will be compared to potassium levels using the Chi Square test. Multiple linear regression analysis will be used to determine a set of variables that predict potassium deficit.

**RESULTS/CONCLUSION:** Data collection is currently in progress. Preliminary results will be presented.

**PL III-2**

TREATMENTS THAT IMPACT OUTCOMES IN SEPSIS WITH UNDERLYING CIRRHOSIS (TRIOS-C STUDY): Impact of resuscitation method on patient outcomes. Maegan M. Patterson, Krystal K. Haase, Charles F. Seifert, Steven Pass, Lauren N. Adams, Nephy Samuel, Texas Tech University Health Sciences Center School of Pharmacy, Amarillo, Lubbock, Dallas, Texas.

**BACKGROUND:** Patients with cirrhosis are predisposed to developing sepsis with an increased risk of multi-organ failure associated with high in-hospital mortality. Furthermore, sepsis is often difficult to distinguish in cirrhotic patients due to the similarities in clinical presentation and pathophysiology. This may contribute to a delay in the diagnosis of sepsis and initiation of care including resuscitation methods. Data to support specific treatment approaches in patients with sepsis and cirrhosis are lacking. The objective of this study is to identify specific prognostic and treatment factors that are associated with improved outcomes in septic patients with cirrhosis. We hypothesize that differences exist in the outcomes of patients with sepsis and cirrhosis based on resuscitation method, antimicrobial regimen, and renal supportive therapy. This abstract will focus primarily on resuscitation methods and the impact on patient outcomes.

**PURPOSE:** The primary aim of this study is to determine specific treatment patterns associated with improvements in all-cause hospital mortality in cirrhotic patients with sepsis. This analysis will compare the impact of different resuscitation strategies. Secondary aims include evaluation of specific treatment strategies and factors associated with length of hospital and ICU stay, adequate resuscitation, complications of over- or under-resuscitation, and impact of covariates on patient outcomes.

**METHODS:** This is a retrospective, multi-center cohort study of subjects admitted to Northwest Texas Healthcare System, University Medical Center, and Veteran Affairs North Texas Health Care System in Amarillo, Lubbock, and Dallas, Texas respectively. This analysis will include adult patients who were admitted to one of the aforementioned institutions between July 1, 2010 and June 30, 2015 with a diagnosis of cirrhosis and sepsis. Eligible subjects will be selected through a query of inpatient medical records using ICD-9 codes and confirmed by manual chart review. Demographic information and baseline characteristics will be presented using descriptive statistics. Categorical variables will be analyzed using either chi-square or Fisher’s Exact test as appropriate. Continuous data between groups will be compared using the Student’s T-test. If the data do not meet assumptions for parametric tests, then Mann-Whitney U test will be used. Univariable and multivariable logistic regression will be conducted via XLSTAT® 2015 software.

**RESULTS/CONCLUSION:** This study has been approved by the Texas Tech University Health Sciences Center IRB and data collection is currently in progress.

**PL III-3**

DETERMINE THE IMPACT OF FLUID ACCUMULATION IN A COMMUNITY HOSPITAL ICU (DRI ICU). Jessica Garza, Chris Tawwater, Jennifer Greller, Texas Tech University Health Science Center School of Pharmacy, Abilene, Texas.

**Background:** “Fluid creep” has been shown to increase morbidity and mortality in several studies of patients with burn injuries, severe sepsis, acute respiratory distress syndrome, and acute kidney injury. Fluid creep is a term that refers to continued administration of fluids in patients with adequate volume status. The goal of fluid resuscitation is to achieve adequate organ perfusion without excessive volume expansion. The major concern of limiting fluid resuscitation is the potential reduction in cardiac output and inadequate organ perfusion leading to complications such as acute kidney injury. Although, hemodynamically unstable patients typically require large amounts of crystalloids, fluid administration continues beyond sufficient resuscitation. In some critical care settings, multiple sources of fluids (e.g., maintenance IV fluids, vasopressors, IV antibiotics, blood products, and nutrition) may unintentionally lead to fluid creep.

**Purpose:** This study was designed to determine the impact of volume status on morbidity and mortality of mechanically ventilated ICU patients.

**Methods:** This study is a single center, retrospective cohort analysis of mechanically ventilated patients admitted to a 20 bed intensive care unit (ICU) in a community hospital. All
adults admitted to the ICU that require mechanical ventilation for at least 48 hours between May 1, 2013 and June 30, 2015 will be included in the study. Patients will be excluded if they are less than 18 years of age, pregnant, prisoners or wards of the state, have end-stage renal disease requiring dialysis or admitted for cardiothoracic surgery, intentional drug overdose or attempted suicide. Data collection consists of patient demographics, fluid balance, acute kidney injury, new onset shock and clinical outcomes. The primary outcome of the study is ICU length of stay. Secondary outcomes include ventilator-free days, daily fluid balance, maximum daily weight, total furosemide dose, and, discharge disposition. Safety outcomes include acute kidney injury and new onset shock. Results/Conclusions: Data collection is ongoing and results are in progress.

**PL III-4**

**COMPARISON OF NOREPIINEPHRINE AND VASOPRESSIN TO NOREPIINEPHRINE IN ACIDOTIC SEVERE SEPTIC SHOCK.**

**Hannah Davis, Darrel W. Hughes, Amanda Fowler, Rebecca Attridge.**

Department of Pharmacy, University Hospital, San Antonio, Texas.

**Background:** The Surviving Sepsis Campaign guidelines recommend norepinephrine as first line vasopressor and recommend low dose vasopressin may be added with the intent of increasing mean arterial pressure (MAP) or reducing norepinephrine doses. Vasopressin retains activity in acidic environments while catecholamines may be less active. Vasopressin use in septic shock has been associated with a decreased incidence of cardiac arrest, decreased dose requirements of norepinephrine, increased urine output and creatinine clearance, decreased 24 hour plasma cytokine levels and improved SOFA scores at 48 and 72 hours when compared to norepinephrine monotherapy. Early administration of vasopressin is associated with decreased arrhythmias and lower norepinephrine requirements. No studies have been published examining the effect of adjunctive vasopressin in acidic refractory septic shock patients.

**Objective:** The primary objective was to determine the time to hemodynamic stability with norepinephrine and vasopressin compared to norepinephrine. Secondary objectives evaluated time to achieving surrogate endpoints in resolution of septic shock.

**Methods:** A single center chart review of adults admitted to the ICU that require mechanical ventilation for at least 48 hours between January 2009 and August 2015, meeting diagnostic criteria for septic shock refractory to fluid administration with a pH < 7.2, was performed. Patients were excluded if initiated on a vasopressor other than norepinephrine, etiology of shock was not septic, pregnant, incarcerated, < 18 years of age, or the patient did not survive beyond 24 hours. The control arm consisted of patients receiving norepinephrine monotherapy or in conjunction with vasopressors other than vasopressin, while the treatment arm included patients receiving norepinephrine and vasopressin; additional vasopressors could be added after vasopressin initiation. Patient demographics, past medical history, APACHE II scores, infection characteristics including causative pathogen and time to appropriate antibiotic therapy, hemodynamic characteristics, outcomes, and adverse effects were collected.

Results: Twenty-five patients were included, 16 patients in the treatment arm and 9 in the control arm. The majority of the population were white males, with a history of cirrhosis 14/25 (56%), diabetes 9/25 (36%), or cancer 6/25 (24%). The predominant site of infection was pulmonary 13/25 (52%). Mean APACHE II scores were 32 and 28 for the treatment and control arm, respectively (p=0.17). Time to hemodynamic stability was a median of 44 vs 26 hours for the treatment and control arm, respectively (p=0.7). MAP goal at 6 hours was achieved in 31% vs 89% of the treatment and control arm, respectively (p=0.01). Median time to vasopressin addition was 13 (5-29) hours. Lactate clearance was significantly slower in the treatment vs control arm (median of 87 vs 9 hours, p=0.005). Post-hoc analysis of norepinephrine and early vasopressin (< 6 hours) compared to control found time to hemodynamic stability of 9 vs. 26 hours (p=0.1).

Conclusions: The addition of vasopressin to norepinephrine in septic shock patients with acidosis does not appear to benefit time to hemodynamic stability. The non-randomized, retrospective nature of this study and delayed initiation of vasopressin severely limit external validity and interpretation of these numerical associations.

**PL III-5**

**IMPACT OF A PHARMACIST-LED VACCINE RECOMMENDATION PROGRAM FOR PEDIATRIC KIDNEY TRANSPLANT CANDIDATES.**

**Clarice E. Cartthorn, Reed C. Hall, Pamela R. Maxwell, and Barrett R. Crowther.**

Department of Pharmacy, University Health System, San Antonio, TX; Pharmacotherapy Division, College of Pharmacy, The University of Texas at Austin; Pharmacotherapy Education & Research Center, The University of Texas Health Science Center at San Antonio.

**BACKGROUND:** Previous studies have shown that a significant proportion of pediatric transplant recipients have incomplete age-specific vaccination schedules at the time of transplantation. Currently, no published studies have described the role of a transplant pharmacist in improving immunization rates for this vulnerable population.

**PURPOSE:** The goal of this analysis was to evaluate the impact of transplant pharmacist interventions on the completion rate of vaccination schedules at the time of transplant.

**METHODS:** A single-center, retrospective study was conducted for pediatric kidney transplant recipients with available vaccine records who underwent transplantation between 1/1/12 and 9/30/15. We compared patients who received pharmacist-led vaccination recommendations prior to transplant to a control group without pharmacist recommendations. Intervention began 1/1/14 and included assessment of vaccination status at time of initial evaluation according to the CDC immunization schedule and provision of recommendations for a vaccination catch-up schedule.

**RESULTS:** Forty-seven pediatric patients were included. The intervention and control groups included 29 and 18 patients, respectively. Overall, the mean age was 11 (range 1-18) years at transplant and a majority were Hispanic (60%), female (53%), and recipients of a deceased donor transplant (89%). Baseline characteristics were similar between groups. The median percentage of up-to-date vaccinations at the time of evaluation was 80% in both groups [p=0.62]. The median percentage of up-to-date vaccinations at the time of transplant was significantly
higher in the intervention group (90%; IQR 82-100%) vs. the control group (80%; IQR 71-80%) \( p=0.0008 \). No patient was admitted for a vaccine-preventable infection within 6 months post-transplant.

**CONCLUSION:** In this cohort, not all patients were fully immunized at the time of evaluation; however, with pharmacist intervention, significantly more patients were up-to-date with vaccination schedules at the time of transplant. These results suggest that a transplant pharmacist may serve as a valuable resource to increase immunization schedule compliance between time of evaluation and transplantation.

**PL III-6**

**ALCOHOL WITHDRAWAL TREATMENT: OUTCOMES IN PATIENTS RECEIVING A SYMPTOM-TRIGGERED REGIMEN WITH OR WITHOUT SCHEDULED CHLORDIAZEPoxide.** Megan Radigan, Leanne Current, C. Joseph Kramer, Adam Mora. Baylor University Medical Center, Dallas, TX.

**PURPOSE:** Current guidelines recommend a symptom-triggered approach to alcohol withdrawal treatment based on the Clinical Institute Withdrawal Assessment for Alcohol Scale (CIWA-Ar). A symptom-triggered approach reduces the risk of oversedation by administering benzodiazepines only when a patient is showing symptoms of withdrawal. This study evaluated outcomes in patients receiving a symptom-triggered benzodiazepine regimen with or without the addition of scheduled chlordiazepoxide.

**METHODS:** A retrospective chart review was conducted of patients admitted to the medical ICU between July 1, 2013 and July 1, 2015 with a diagnosis of uncomplicated alcohol withdrawal. The study population was divided into two cohorts: those receiving symptom-triggered benzodiazepine administration alone and those receiving symptom-triggered benzodiazepine administration with the addition of chlordiazepoxide. Patients were evaluated for cumulative benzodiazepine administration, as well as hospital length of stay, ICU length of stay, and incidence of oversedation.

**RESULTS:** Data is being collected and analyzed; results will be described.

**CONCLUSION:** Conclusions will be drawn and presented upon completion of data analysis.

**PL III-7**

**CONTINUOUS VERSUS INTERMITTENT PANTOPRAZOLE INFUSION THERAPY FOR NONVARICEAL GASTROINTESTINAL BLEEDING: A RETROSPECTIVE STUDY OF AN INSTITUTIONAL DRUG SHORTAGE MANAGEMENT PLAN.** Alison Merkel, Douglas Benedetti, Eardi Curry, Nicolas Forcada, Nora Talley, Douglas Srygley. St. David’s South Austin Medical Center, Austin, TX.

**PURPOSE:** Upper gastrointestinal bleeding has been associated with significant morbidity, mortality, and increased medical costs. Clinical guidelines recommend high-dose proton pump inhibitor therapy using a bolus plus continuous infusion for 72 hours (BCI) to treat and prevent rebleeding. In response to a national shortage, we developed a pantoprazole conservation plan. As a management strategy, our institution implemented an automatic substitution from the traditional bolus plus continuous infusion pantoprazole therapy to bolus (80 mg) plus intermittent (40 mg intravenously twice daily) therapy (BII). We evaluated 30-day readmission for gastrointestinal bleeding in patients treated with BCI versus BII.

**METHODS:** This single-center, retrospective study was approved by the local IRB. We assessed patients who were at least 18 years old and were diagnosed with upper gastrointestinal bleeding from April 1, 2014 to December 31, 2014 and April 1, 2015 to December 31, 2015. Patients were divided into two groups based on pre-intervention BCI administration of pantoprazole or post-intervention BII administration of pantoprazole. Demographic information including age, gender, ethnicity, baseline renal and hepatic function tests, and comorbid conditions were collected for each patient. The primary endpoint evaluated was 30-day readmission. Secondary endpoints evaluated include rebleeding within 7 days, repeat endoscopy performed within 30 days, surgical or radiological intervention for rebleeding within 30 days, length of stay, cost of inpatient care, and infection rate. Patients were further evaluated for clinically significant rebleeding. Descriptive statistics will be used to summarize the data and nonparametric comparative tests will be used to assess differences in baseline characteristics and outcomes between each group.

**RESULTS:** No statistically significant differences were found between each group.

**CONCLUSION:** Conclusions will be drawn and presented upon completion of data analysis.

**PL III-8**

**IMPACT OF NOREPINEPHRINE WEIGHT-BASED DOsing COMPARED TO non-WEIGHT-BASED DOcing IN ACHIEVING TIME TO GOAL MEAN ARTERIAL PRESSURE IN OBESE PATIENTS WITH SEPTIC SHOCK.** Nina Vadie, Mitchell Daley; Manasa Murthy; Carrie Shuman, Seton Healthcare Family, Austin, TX.

**PURPOSE:** Septic shock is a life-threatening condition with a mortality rate of 20-30 percent. Inadequate tissue perfusion, measured via mean arterial pressure (MAP), is an independent determinant of mortality. Timely achievement of goal MAP is dependent on optimal dosing of vasopressors. However, dosing challenges exist in special populations with altered pharmacokinetics, such as obese patients. Currently, a lack of standardization exists in dosing norepinephrine, the first-line vaspressor for septic shock. This project was designed to determine if weight-based dosing (WBD) of norepinephrine achieves earlier time to goal MAP compared to non-weight based dosing (non-WBD) in obese patients with septic shock.

**METHODS:** Patients were identified by cross-matching ICD-9 diagnosis codes for septic shock and patients with a body mass index (BMI) of greater than 30 kilograms per meter squared with a drug utilization report of norepinephrine from January 24, 2013 to October 31, 2015. Patients will be excluded if: transferred from an outside hospital if resuscitation was started, norepinephrine not the initial vaspressor, data is unable to be attained for initial resuscitation, or those previously treated for septic shock during the current hospital admission. In order to achieve
80 percent power, 63 patients in each group are needed to detect a 25 percent difference in time to goal MAP based on a mean time to goal MAP of 60 minutes and a standard deviation of 30 minutes. Analysis of the primary endpoint will use a Wilcoxon rank-sum test. Secondary outcome comparisons will be performed using a chi-square test for nominal data, a Kaplan-Meier curve for time sensitive data, and a rank sum test for continuous variables. Statistical significance will be determined based on an a-priori alpha set at 0.05. Data collection is currently in progress.

RESULTS: In-progress.
CONCLUSION: In-progress.

PL III-9
COMPARISON OF WEIGHT BASED VERSUS NON-WEIGHT BASED NOREpinephrine DOSING IN PATIENTS WITH SHOCK. William Shu, Andrew C. Faust, Lyndsay A. Sheperd, Terri Smith, Texas Health Presbyterian Hospital of Dallas, Dallas, TX.

BACKGROUND: Norepinephrine is a vasopressor commonly used to support patients with shock due to its positive effects on cardiac output and vasoconstriction. Due to the severity of illness in patients with shock, rapid and optimal treatment is necessary. However, quality studies supporting a specific dosing approach for this medication are lacking. The purpose of this study is to compare the effect of weight based versus non-weight based norepinephrine dosing on time to achieve mean arterial pressure (MAP) goal greater than 65 mm Hg in patients with distributive, cardiogenic, and hypovolemic shock.

METHODS: In August 2014, our facility adopted a weight based norepinephrine dosing protocol. Using data retrospectively collected from the institution’s electronic health records, we compared time to goal MAP in medical and surgical ICU patients. Patients admitted to the medical or surgical ICU before (January to June 2014) and after (January to June 2015) implementation of the weight based norepinephrine dosing protocol were compared.

RESULTS: A total of 740 patients were available for review and 293 patients were evaluated for study inclusion. Of those, 115 patients met inclusion criteria for the study (58 patients received weight based dosing and 57 patients received non-weight based dosing). In the weight based dosing group, 66% and 21% of patients were diagnosed with distributive and cardiogenic shock respectively. In the non-weight based dosing group, 63% and 23% of patients were diagnosed with distributive and cardiogenic shock respectively. The mean age in the weight based dosing group was 68.6 ± 15.5 years compared to 63.5 ± 16.9 years in the non-weight based dosing group. The mean time to MAP greater than 65 mm Hg was 4.41 ± 1.83 hours versus 5.30 ± 2.85 hours for weight based and non-weight based dosing groups respectively (p = 0.049, 95% CI 0.01-1.77).

CONCLUSIONS: Based on the data, weight based norepinephrine dosing was associated with a shorter time to goal mean arterial pressure. More robust studies are needed to conclude the most optimal dosing approach.

PL IV-1
EFFICACY AND SAFETY OF STANDARDIZED SEPSIS RESUSCITATION PATHWAYS IN PATIENTS WITH END STAGE RENAL DISEASE, CIRRHOSIS, AND CONGESTIVE HEART FAILURE. Gregory A. Laine, Quintin M. Broussard, Ritwick Agrawal, CHI St. Luke’s Health – Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: The purpose of this study is to determine if specialized fluid resuscitation strategies for severe sepsis and septic shock patients with pre-existing end stage renal disease, cirrhosis, or congestive heart failure show any differences in outcomes compared to non-protocolized therapy. Specialized fluid resuscitation includes 30 mL/kg lactated ringers for congestive heart failure patients, 30 mL/kg normal saline for end stage renal disease patients, and 30 mL/kg normal saline and 25% albumin 1.5 grams/kg for cirrhosis patients. Though early goal-directed therapy has been shown to improve survival in heterogenous groups of patients with severe sepsis and septic shock, the 2012 Surviving Sepsis Campaign consensus guidelines do not address type or amount of crystalloid to use and role of colloids in specialized patient populations such as end stage renal disease, cirrhosis, and congestive heart failure, where fluid selection and volume administered may be important in determining patient outcomes.

METHODS: This study is a retrospective, observational study including septic patients with hypotension and/or lactate greater than or equal to 36 mg/dL with pre-existing end stage renal disease, cirrhosis, or congestive heart failure. Patients included were those that were hospitalized between August 2014 and March 2016. Potential study patients were identified through an ICD-9 and ICD-10 search. The primary outcome of this study is all-cause mortality. Secondary outcomes include intensive care unit and hospital lengths of stay, cost per case, and complications related to fluid resuscitation including acute respiratory failure, need for mechanical ventilation, acute renal failure, need for renal replacement therapy, and hyperchloremic metabolic acidosis.

RESULTS: Results are pending upon completion of data analysis.

CONCLUSION: Conclusion is pending upon completion of data analysis.

PL IV-2
ANTICHOLINERGIC RISK SCORE AND ANTIPSYCHOTIC PRESCRIBING IN THE NURSING HOME POPULATION. Whitney M. Zentgraf, Genoveva Garza, Amie Taggart Blaszczyk, Texas Tech University School of Pharmacy, Dallas, TX.

PURPOSE: To determine whether anticholinergic burden scores predict the likelihood of antipsychotic prescribing in nursing home residents. Several studies have investigated the relationship between anticholinergic drug intake and cognitive impairment as well as anticholinergic drug intake and delirium. No study has investigated the link between anticholinergic scores and antipsychotic agent prescribing to date.

METHODS: Data was collected from paper and electronic records from nursing homes within the state of Texas. This study included nursing home residents who were 65 years
and older. Residents were excluded from the study if they had been admitted to the facility in the previous 30 days; had diagnoses of schizophrenia, Huntington’s chorea, or Tourette’s syndrome; or had incomplete medical records. Correlation and multiple linear regression models will be used to analyze the association of anticholinergic burden scores, assessed by both the Anticholinergic Risk Scale and the Anticholinergic Cognitive Burden scale, with increased risk of antipsychotic prescribing. A sub-analysis is planned to evaluate anticholinergic risk scores and antipsychotic prescribing specifically in nursing home residents with dementia.

**RESULTS:** Institutional Review Board approval was received from Texas Tech University and data collection is ongoing.

**CONCLUSION:** Conclusions are pending as data collection continues.

**PL IV-3**

**IDENTIFYING PATIENT AND ANTIRETROVIRAL SPECIFIC FACTORS FOR SWITCHING TO SIMPLIFIED HIV TREATMENT REGIMENS.** Amy M. Cheng, Rustin D. Crutchley, Joseph C. Gathe Jr., Carl Mayberry. University of Houston College of Pharmacy, Houston, TX.

**PURPOSE:** To identify variables such as patient and antiretroviral specific factors that influence the decision to simplify to more recently approved once daily antiretroviral therapy (ART). By identifying these variables, this knowledge may help to inform providers of when to make changes involving simplification to newer ART combinations in order to improve adherence to ART and to maintain optimal clinical treatment outcomes.

**METHODS:** This is a retrospective study including patients from July 2014 to February 2016 from Therapeutics Concepts (large and diverse adult HIV clinic in Houston, TX) who were on prior different ART regimens and are currently receiving newer single tablet, once daily ART regimens such as elvitegravir/cobicistat/emtricitabine/tenofovir, elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide, dolutegravir/abacavir/lamivudine, darunavir/cobicistat and atazanavir/cobicistat. Eligible patients will be identified through electronic medical records (EMR) at Therapeutic Concepts. For each patient included in our study, the following data will be collected: preexisting clinical treatment parameters such as HIV viral load and CD4 cell count at baseline (i.e. time of ART switch/simplification), and both 3 months and 6 months before and after simplification. Additional data will also include previous ART regimen, history of other ART, list of other documented active/current medications at time of ART switch (i.e. non-ART pill burden), history of resistance testing (i.e. genotype/phenotype), and reasons for switching ART. The primary objective of this study is to identify patient and antiretroviral specific factors for switching to newer, simplified, single tablet, once daily ART regimens. These data will be described using descriptive statistics. The secondary objective of this study will be to evaluate the impact of these switch changes in simplification of ART on treatment outcomes. Treatment outcomes include proportion of those with virologic suppression (HIV viral load (VL) < 20 copies/mL) and changes in CD4 cell counts at six months after switch/simplification in ART is made. Mean changes in CD4 cell counts from baseline (time switch/simplification is made) to 6 months will be compared using Student’s t-test. The proportion of patients with VL<20 copies/mL will be compared at baseline and six months using Chi-Square test.

**RESULTS:** Analysis is ongoing and preliminary results will be presented.

**CONCLUSION:** It is anticipated that the results of this study will highlight for providers various important aspects of simplification of ART, including impact on clinical treatment outcomes.

**PL IV-4**

**EFFECT OF DARBEPOETIN ALFA ON MORTALITY AND TRANSFUSION INDEPENDENCE IN CRITICALLY ILL TRAUMA PATIENTS.** Sara Schulz, Jennifer Roth, Sarah Harrison, Aaron Killian, Matthew Lovitt, Geoffrey Funk, Baylor University Medical Center, Dallas, TX.

**PURPOSE:** Critically ill trauma patients often require greater amounts of red blood cell (RBC) transfusions compared to non-trauma ICU patients. The attributable mechanism occurs when erythropoietin (EPO) fails to increase in response to reduced hemoglobin levels, thus inhibiting RBC production. Utilization of exogenous erythropoietin stimulating agents (ESA) has been hypothesized to overcome this deficiency. Studies demonstrate the administration of ESA reduces morbidity and improves mortality for severe traumatic brain injury (TBI).

Many trials utilize epoetin alpha to study effects on transfusion independence in critically ill patients. Darbepoetin alfa is structurally similar to epoetin alfa; however, the addition of two N-glycosylated moieties increases the terminal half-life nearly 3-fold. This longer half-life makes darbepoetin an attractive option to achieve hemostatic effects with fewer doses. Currently, a boxed warning exists for ESA agents concerning an increased risk of serious cardiovascular and thromboembolic events and mortality when targeting hemoglobin levels >11 g/dL. Considering the lack of conclusive data, blood transfusion associated complications, and benefit versus risk of ESA, this study aims to assess the effect darbepoetin alfa will have on mortality and transfusion independence in critically ill trauma patients.

**METHODS:** This study has been approved by the Institutional Review Board. It is a single-center, retrospective chart review, from January 1, 2013, through June 30, 2015, comparing adult trauma patients who received darbepoetin alfa to those who did not. A propensity score matching scheme will pair patients admitted to the ICU for a minimum of 72 hours. The primary outcome will be in-hospital mortality. Secondary outcomes include number of RBC transfusions, neurological outcomes in TBI patients, and incidence of thromboembolic events. Summary statistics will be reported with the appropriate measures of central tendency. Data will be analyzed for normality of distribution with statistical significance determined using appropriate parametric tests or their non-parametric analogs.

**RESULTS:** Will be presented

**CONCLUSION:** Will be presented.
CONCLUSION

RESULTS

would yield 80 percent power to detect a 15% difference within groups. It was determined that 172 patients per group

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recommended target doses of each agents. The study also

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prescribed 1) an appropriate HF beta blocker, 2) an

angiotensin

pharmacists compared to the patients managed through standard care office visits on measures of: being

seen by pharmacists compared to the patients managed through standard care office visits.

This study aims to describe differences between patients in the control group will be retrospectively

followed from any visit with a physician for 12 months and patients in the intervention group will be retrospectively followed from

their first visit with the pharmacist for 12 months. This study aims to describe differences between patients seen by pharmacists compared to the patients managed through standard care office visits on measures of: being prescribed 1) an appropriate HF beta blocker, 2) an angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs), and 3) the recommended target doses of each agents. This study aims to describe differences between patients seen by pharmacists compared to the patients managed through standard care office visits on multiple measures: being prescribed 1) an appropriate HF beta blocker, 2) an angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs), and 3) the recommended target doses of each agents. The study also aims to compare the refill adherence to an appropriate HF beta blocker and an ACE inhibitor or ARB between the two groups. It was determined that 172 patients per group would yield 80 percent power to detect a 15% difference between the groups.

RESULTS: In progress.

CONCLUSION: In progress.

EVALUATION OF AN ELECTROLYTE REPLETION PROTOCOL IN PATIENTS RECEIVING THERAPEUTIC HYPOTHERMIA FOR SUDDEN CARDIAC DEATH. Michael Ha, Jennifer Ann Gass, Memorial Hermann – Texas Medical Center, Houston, TX.

Purpose:

To evaluate and validate the efficacy and safety of the hypothermia electrolyte repletion protocol at a large tertiary academic medical center. We aimed to determine if serum electrolytes are maintained within target ranges and to determine the incidence of safety events.

Methods:

This is a retrospective descriptive observational study with no comparator cohort. Adult patients were included if they were receiving therapeutic hypothermia status post cardiac arrest and placed on the electrolyte repletion protocol from July 1st, 2012 to September 15th, 2015. The primary endpoint was the first serum potassium, magnesium, and phosphate levels drawn upon completion of rewarming. Secondary endpoints included the time within accepted electrolyte ranges and electrolyte doses required to maintain adequate levels. Safety endpoints included the number and type of cardiac arrhythmias, cardiac arrest, mortality, length of stay, and need for interventions to address electrolyte derangements.

Results:

Review and analysis of 204 patients was performed. The mean serum levels of potassium, magnesium, and phosphate post-rewarming were 4.2 mEq/L (SD 0.6), 1.9 mg/dL (SD 0.4), and 3.8 mg/dL (SD 1.5) respectively. Initial potassium, magnesium, and phosphate levels post-rewarming were within target ranges 58.2%, 35.5%, and 44.2% of the time. During the first 24 hours post-rewarming potassium, magnesium, and phosphate levels were within target ranges 56.1%, 39.4%, and 45.6% of the time. Out-of-range electrolyte levels were primarily below target range. Safety events were rare. Life threatening arrhythmias potentially attributable to electrolyte disturbances occurred in 2 patients. Nine patients received drug interventions for hyperkalemia. Three patients received renal replacement therapy post-rewarming to correct for hyperkalemia.

Conclusion:

The hypothermia electrolyte repletion protocol appears to be effective at maintaining potassium and phosphate levels within target ranges post-rewarming. Revision of the protocol may be considered to optimize magnesium repletion in order to achieve a goal frequency in range of ≥50%. The protocol does not appear to increase the risk for safety events.

INVOLVEMENT VERSUS USUAL CARE IN A HEART FAILURE POPULATION. Qian Ya Lensa Zeng, Karen Rascati, Kristina Sucic, Lindsay Vasquez, Jason Jokerst, University of Texas at Austin and CommUnityCare Clinics.

Purpose:

The beneficial effect of pharmacist involvement in the management of heart failure (HF) has been demonstrated in multiple studies. In these previous studies, management of the heart failure is the main disease state of focus for the pharmacists. The following study is designed to describe the optimization and adherence of HF medications in patients who are referred to a pharmacist for management of other chronic diseases compared to patients who receive usual care with their physicians only.

Methods:

This study will be a descriptive retrospective case-control chart review. To be included in the study, patients will have to be at least 18 years of age and have a diagnosis of HF with reduced ejection fraction during the study period. Patients in the control group will also need to have at least 2 visits with a physician, and patients in the intervention group will need to have at least 2 visits with a pharmacist during the study period. Refill history will be obtained through patients’ Medical Access Program or CommUnityCare Sliding Fee Scale insurance. Patients will be excluded if they have a diagnosis of HF with preserved ejection fraction or unclassified heart failure or visit with a pharmacist prior to the study period. Patients in the intervention group will be retrospectively followed from their first visit with the pharmacist for 12 months and patients in the control group will be retrospectively followed from any visit with a physician for 12 months. This study aims to describe differences between patients seen by pharmacists compared to the patients managed through standard care office visits on measures of: being prescribed 1) an appropriate HF beta blocker, 2) an angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs), and 3) the recommended target doses of each agents. This study aims to describe differences between patients seen by pharmacists compared to the patients managed through standard care office visits on multiple measures: being prescribed 1) an appropriate HF beta blocker, 2) an angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs), and 3) the recommended target doses of each agents. The study also aims to compare the refill adherence to an appropriate HF beta blocker and an ACE inhibitor or ARB between the two groups. It was determined that 172 patients per group would yield 80 percent power to detect a 15% difference between the groups.

Results:

In progress.
PL IV-8
EFFECT OF AMIODARONE LOADING DOSE ON READMISION RATES IN PATIENTS WITH PAROXYSMAL AND PERSISTENT ATRIAL FIBRILLATION. Molly F. Curran,1,2,3 Rebecca L. Attridge,1,4,5 and Bethany A. Kalich1,4,5
1Department of Pharmacy, University Health System, San Antonio, TX; 2Pharmacy Therapy Division, College of Pharmacy, The University of Texas at Austin, Austin, TX; 3Pharmacy Therapy Education & Research Center, The University of Texas Health Science Center at San Antonio, San Antonio, TX; 4The Feik School of Pharmacy, The University of Incarnate Word, San Antonio, TX; 5The University of Texas Health Science Center at San Antonio, Department of Medicine.

Background: Patients with atrial fibrillation (AF) unable to tolerate or who fail rate control strategies are candidates for rhythm control strategies: pharmacologic, electrical, catheter ablation or surgical maze procedures. Amiodarone (AMIO) is often the pharmacologic agent of choice for cardioversion and maintenance of normal sinus rhythm. The recommended AMIO loading dose in the American Heart Association/American College of Cardiology guidelines is up to 5 g intravenous (equivalent to 10 g oral). In practice, smaller loading doses are often used, especially if AF resolves prior to administration of the complete loading dose. Both full and partial AMIO loading dose strategies are currently used widely in practice.

Objectives: The primary objective is to determine if there is a difference in the 7-day, 30-day, 90-day or one-year readmission rates of patients with paroxysmal or persistent AF who received a partial loading dose versus a full loading dose of AMIO. Secondary objectives include an evaluation of incidence of adverse effects between the two loading dose strategies, and the contribution of traditional risk factors, such as hypertension, coronary artery disease and valvular disease, to treatment failure.

Methods: A retrospective cohort study was conducted to identify AF patients ages 18 years and older admitted to University Hospital and initiated on AMIO therapy with UT Cardiology follow-up outpatient between July 1, 2005 and October 31, 2015. Pharmacy billing records were queried to expedite subject identification. Patient baseline characteristics, cardiology records, pharmacy records, response to therapy and adverse events were collected.

Results: An interim data analysis was conducted after 262 patients were screened for inclusion. Of the 28 patients meeting all three inclusion criteria, there were no significant differences in baseline characteristics between the partial and full loading dose groups. Median AMIO loading dose received in the full-dose group was 9400 mg versus 4255 mg in the partial-dose group (p = 0.007). Initial analysis of readmission rates found no statistically significant differences between full and partial dose groups in seven day (12.5% v. 10%, p=1.00), 30-day (12.5% v. 15%, p =1.00), 90-day (25% v. 20%, p =1.00) or one year (25% v. 55%, p = 0.22) readmission rates.

Conclusions: Data collection is on-going. Preliminary data collection shows no significant difference in readmission rates between partial or full AMIO loading doses.

Disclosures: No authors have actual or potential conflicts of interest or relevant financial relationships with any commercial interest in relation to this research project.

PL IV-9
SAFETY AND EFFICACY OF DEXMEDETOMIDINE IN PATIENTS WITH CONGESTIVE HEART FAILURE. Stephe Kuriakose, Kristen Hesch. VA North Texas healthcare system Dallas, Texas.

Purpose: Heart failure is a clinical syndrome that results in the structural and functional impairment of ventricular function. About 5.8 million patients in the United States have heart failure with 670,000 new cases annually. Patients with heart failure often presents with signs of pulmonary congestion, ascites, cool extremities resulting from low cardiac output and stroke volume. Decline in cardiac output can be due to various factors such as cardiac remodeling, inflammatory process, failure of the renin-angiotensin-aldosterone syndrome, genetic factors. Dexmedetomidine (DEX) is a highly potent and selective alpha 2 adrenergic agonist that has gained popularity in recent years for the induction and maintenance of sedation. It’s quick reversibility, low side effect profile and lack on respiratory side effects has made it ideal agents for ICU sedation in mechanically vented and non-vented patients. Hypotension and bradycardia are the most common side effects reported with its use.

Objective: The objective of the study is to evaluate the safety and efficacy of DEX infusion for sedation in patients with heart failure in the ICU at North Texas VA North Texas Healthcare system

Method: This is a retrospective observational study of patients with symptoms of congestive heart failure who received DEX for sedation in the ICU. The primary outcomes evaluated are days of ICU length of stay, hospital length of stay, and mortality. Secondary outcomes include safety parameters for DEX including heart rate (HR), mean arterial pressure (MAP), respiratory rate, RASS scores and need for rescue boluses of other sedatives. Patients who are 18 years of age or older with a history of heart failure and received DEX between January 2012 and September 2015 were included in the study.

Results/Conclusion: Primary and secondary outcomes are under investigation with data collection and evaluation currently being conducted.

PL V-1
THE 4T’S SCORING SYSTEM IN THE SCREENING OF HEPARIN-INDUCED THROMBOCYTOPENIA IN PATIENTS WITH MECHANICAL CIRCULATORY SUPPORT. Yeunju Lee, Adam Sieg, Phillip Weeks, Jennifer Gass, Memorial Hermann – Texas Medical Center, Houston, TX.

Purpose: Heparin-induced thrombocytopenia (HIT) is a serious antibody-mediated adverse event which can lead to thromboembolic complications. Patients with mechanical circulatory support (MCS) commonly receive significant heparin exposure after device implantation which may lead to the development of heparin antibodies. The 4T’s scoring system utilizes clinical features to risk stratify patients on the likelihood of HIT. While evaluated and validated in other patient populations, this tool has not been evaluated in patients with MCS. The objective of this study is to evaluate the predictive value of the 4T’s scoring system in patients with MCS.
METHODS: This was a single center, retrospective observational study evaluating adult MCS patients who were receiving continuous heparin infusion. Patients were included if there was a clinical suspicion for HIT with subsequent heparin antibody ELISA or serotonin release assay (SRA) testing. Electronic medical records from January 1st, 2012 to July 31st, 2015, were reviewed. Patient’s 4T’s scores were calculated and risk stratified to correlate with the heparin antibody ELISA and SRA results.

RESULTS: A total of 59 patients were included in this study. A total of 52 patients had low 4T’s score ranging from 0 to 3 and 7 patients had intermediate 4T’s score ranging from 4 to 5. Mean 4T’s score and optical density (OD) values in low score group was 2±1 and 0.398±0.489 respectively compared to 4±0.5 and 1.408±1.247 in the intermediate score group. Further data analysis will be performed.

CONCLUSION: Low 4T’s score appears to correlate with lower optical density of values.

PL V-2
VTE TREATMENT OUTCOMES IN CANCER PATIENTS AND EFFECT OF THIRD-PARTY PAYER ON ANTICOAGULANT CHOICE. Katherine A. Kelly, Jennie Mathew, Gary W. Jean, Eneko Larumbe, Lida Binesheian, Yasmine Alhasan. Texas Tech University Health Sciences Center/UT Southwestern Medical Center, Dallas, TX.

Background: Cancer patients are at an increased risk for the development and recurrence of venous thromboembolism (VTE). Previous research has identified low molecular weight heparins (LMWHs) to be the treatment of choice for VTE in cancer patients. However, lack of insurance coverage or limited third-party coverage of LMWHs has narrowed treatment options for many patients to vitamin K antagonists (warfarin). Despite the paucity of clinical efficacy data in cancer patients, prescribers are also considering the use of new target-specific oral anticoagulants (TSOACs), like rivaroxaban, for their convenience and patient assistance programs.

Objective: The purpose of this study is to examine the rates of recurrent VTE among cancer patients treated with LMWHs versus those treated with oral anticoagulants.

Methods: This was a retrospective chart review of cancer patients with recurrent VTE between January 1, 2009 and December 31, 2014 at the UT Southwestern Medical Center's William P. Clements Jr. University Hospital. The primary outcome of the study was the rate of recurrent VTE in patients who received LMWH versus those who received oral anticoagulants. Other outcomes investigated include: risk factors associated with recurrent VTE events and influence of third-party payer on anticoagulant selection. Patients included in this review are those with active cancer and with confirmed VTE while receiving treatment with warfarin, rivaroxaban, enoxaparin, dalteparin, or fondaparinux. Information on patient demographics, third-party payer, type of cancer, type of anticoagulation received, type of initial VTE and recurrent VTE, smoker status, hormonal therapy agents, hypercoagulable conditions, INR or anti-Xa levels at time of recurrence, and fatal bleeding or thrombotic events was collected.

Results: Over 900 patient charts were reviewed with 457 patients meeting inclusion criteria (178 in the oral anticoagulant group and 279 in the parenteral anticoagulant group). The included population had an average age of 63 years, 50% were male, 13% were smokers, and 94% had medical insurance. 48% of the study group had a deep venous thrombosis (DVT), 40% had a pulmonary embolism (PE), and 12% had both a PE and a DVT. 61% were anticoagulated with a parenteral agent (dalteparin, enoxaparin, fondaparinux) and 39% were anticoagulated with rivaroxaban or warfarin. There were 23 recurrent VTE events, 12 events (6.7%) in the oral anticoagulant group and 11 events (3.94%) in the parenteral group. Further statistical analysis is pending.

Conclusion: The results of this study will help compare rates of VTE recurrence with different anticoagulants and identify other factors influencing recurrence.

PL V-3
EFFECT OF THE HISTORY OF ETHANOL OR CANNABINOID USE ON SUSTAINED Virologic RESPONSE ACHIEVEMENT RATES FOLLOWING DIRECT-ACTING ANTI-Viral TREATMENT IN HEPATITIS C VIRUS INFECTED VETERANS. Andrew Hinsel, Ian Pace, Michelle Shank, David Jacob, VISN 17 PBM U.S. Department of Veterans Affairs, Temple, TX.

Background: As of 2013, 55% of hepatitis c virus (HCV) infected veterans have a history of alcohol use disorder and 26% have a cannabinoid use diagnosis. In general, clinical trials for second generation direct-acting antiviral (DAA) medications excluded patients with alcohol use disorders and did not include screening for cannabinoid use in study protocols.

Purpose: The aim of this analysis is to determine the effect of high-risk ethanol or cannabinoid use on sustained virologic response rates at twelve weeks (SVR12) following DAA treatment in a veteran population.

Methods: This quality improvement project will be a retrospective cohort analysis to assess the impact of a history of high-risk ethanol or cannabinoid use on achievement of SVR12 following treatment with HCV DAAs. Inclusion criteria required laboratory confirmed chronic HCV viremia with completion of a DAA treatment regimen in the last two years with a second generation DAA and a HCV viral load acquired at least twelve weeks post-treatment. Veterans were stratified into one of four groups based on AUDIT-C and urine drug screen (UDS) for cannabinoids. The four analysis groups were as follows: AUDIT-C score <8 and positive cannabinoid UDS, AUDIT-C score <8 and negative cannabinoid UDS, AUDIT-C score ≥8 and positive cannabinoid UDS, and AUDIT-C score ≥8 and negative cannabinoid UDS. The primary outcome was difference in SVR12 achievement. Secondary outcomes included the difference in rate of SVR12 between stratified AUDIT-C scores, body mass index, hemoglobin A1c, and fibrosis-4 score. Patient information was extracted from the VA corporate data warehouse (CDW) using Microsoft SQL Management Studio 2012. Microsoft Excel was used for data organization and analysis.

Results: Data collection and analysis is currently ongoing.

Conclusion: Results are pending.
SAFETY AND EFFECTIVENESS OF BIVALIRUDIN VERSUS UNFRACTIONATED HEPARIN IN PERCUTANEOUS PERIPHERAL INTERVENTIONS.

Ellen B. Yin, Maryam Bayati, Mahboob Alam; 1CHI St. Luke’s Health Baylor St. Luke’s Medical Center, 2Baylor College of Medicine, Houston, TX.

Background: Currently, the American College of Cardiology/American Heart Association provides no guidelines for anticoagulation during percutaneous peripheral interventions (PPI). Anticoagulation strategies used during PPI are based primarily on studies conducted for percutaneous coronary interventions (PCI). However, peripheral procedures are often technically more complex than PCI, requiring prolonged procedural times and larger sheath sizes that increase the risk of vascular and bleeding complications. Previous studies examining anticoagulation in PPI have been small observational studies, primarily examining the effectiveness and safety of bivalirudin with no active comparator group. With recent studies in PCI questioning the superiority of bivalirudin over unfractionated heparin (UFH) and considering the higher cost of bivalirudin, a study comparing these two agents in PPI is warranted.

Purpose: To compare the in-hospital safety and effectiveness of bivalirudin versus UFH in patients undergoing PPI.

Methods: Data was retrospectively collected to compare patients who received bivalirudin to those who received UFH for PPI from October 2012 to October 2015 at our tertiary academic medical center. Primary endpoints assessed included procedural success (residual stenosis of <20% in the target vessel with no flow-limiting dissections or intravascular thrombus formation) and procedural complications (vascular complication, acute thrombotic events, emergent need for revascularization of the same vessel, amputation, major and minor bleeding, and procedure related mortality). Secondary endpoints assessed include time to sheath removal, hospital length of stay, disposition at discharge, all-cause mortality, 30-day readmissions, and cost of procedural anticoagulation therapy. The Institutional Review Board reviewed and approved this study.

Results: Of the 226 patients that met inclusion criteria, 25 patients (11%) received bivalirudin as anticoagulation for the procedure. Fifty patients of the remaining 221 patients on heparin were randomly selected to be included for analysis to provide a 2:1 heparin to bivalirudin patient ratio. Baseline characteristics were similar between both groups. Various peripheral vascular interventions were performed with the most common site of intervention being the superior femoral artery in both groups. Patients were dosed with bivalirudin at 0.75 mg/kg bolus followed by a 1.75 mg/kg/hr infusion. Patients were dosed with UFH at an average of 68 ± 23 U/kg bolus followed by additional doses based on the activated clotting time (ACT). The average ACT was 227 ± 41 seconds.

Procedural success was similar with bivalirudin versus UFH (84% vs. 94%; P=0.21, respectively). Total procedural complications were also similar with bivalirudin versus UFH (24% vs. 34%; P=0.44, respectively). In both groups, 8% of patients had a major bleeding event and minor bleeding events were similar in both groups as well (12% bivalirudin vs. 10% UFH; P=NS). However, one patient in the bivalirudin group experienced mortality due to retroperitoneal bleeding after the procedure. Time to sheath removal was significantly longer in the UFH group compared with the bivalirudin group (6.2 ± 4.7 hrs vs. 3 ± 2.4 hrs; P=0.002). Hospital length of stay, all-cause mortality, 30-day readmissions, and 30-day readmissions due to vascular causes were also similar between both groups.

Conclusion: Using UFH provided similar clinical outcomes in terms of procedural success and complication rates at a significantly lower cost when compared to bivalirudin in patients undergoing PPI. There was a 4% mortality rate due to bleeding after the procedure in the bivalirudin group. Larger randomized studies are required to further evaluate these findings.

CEFTOLOZANE-TAZOBACTAM (CFT-TAZ) FOR THE TREATMENT OF MULTI-DRUG RESISTANT PSEUDOMONAS (PSDA): A CASE SERIES.


PURPOSE: In December 2014, CFT-TAZ, a novel anti-Pseudomonal cephalosporin in combination with a beta-lactamase inhibitor, was FDA-approved for complicated urinary tract infections and complicated intra-abdominal infections. Data for the use of CFT-TAZ in the definitive treatment of multi-drug resistant (MDR) PSDA species is limited at this time. This study was performed to examine current usage of CFT-TAZ to further understand its role in treatment of MDR PSDA.

METHODS: This was a retrospective case series conducted at a 900-bed academic medical center in Houston, TX. Admitted patients receiving CFT-TAZ for the treatment of MDR PSDA infections between February and December, 2015 were included. Patient demographics, isolate sensitivities and clinical characteristics were collected via electronic medical record review.

RESULTS: Seventeen patients were included in this study of which 11 (65%) had a PSDA respiratory tract infection as their primary indication. Twelve patients (71%) were in the ICU at the time of treatment initiation. Fourteen isolates were tested for CFT-TAZ sensitivities and 11 (79%) were sensitive. Of these isolates, 5 (36%) were sensitive to polymyxin B only and 6 (43%) were sensitive to polymyxin B and aminoglycosides only. Ten of seventeen (59%) patients received CFT-TAZ for definitive use and 7 (70%) of those patients received monotherapy. Three of seven (43%) patients who received monotherapy experienced in-hospital mortality vs. 2/3 (67%) of combination therapy patients. Eight of 10 (80%) definite therapy patients received CFT-TAZ as an immediate escalation from a previous regimen. Of these 8, 4 (50%) experienced in-hospital mortality.

CONCLUSION: Although use of CFT-TAZ remains judicious, resistance was frequent in our population, reinforcing the need to obtain sensitivities. In infections due to MDR PSDA, CFT-TAZ can be considered for use if the isolate is sensitive. Given the limitations of this study, larger studies are required to determine if CFT-TAZ can be used efficaciously as monotherapy.
PL V-6
MEASURING THE IMPACT OF A COMPLEX PATIENT SIMULATION, IN AN AMBULATORY CARE SETTING, ON EMPATHY IN 3RD AND 4TH YEAR PHARMACY STUDENTS. Lisa Chastain, Crystal Brown, Krystal Edwards, Adebola Adesoye, Courtney Duval, Katie Kaczumrski, Texas Tech University School of Pharmacy, Dallas, TX.

PURPOSE: Empathy is one of the key foundations to successful patient encounters, as it communicates and builds trust between a patient and healthcare provider. As empathy has been an established need for skill for health care providers, it falls to educators to develop new and innovative practices to not only improve empathy in students, but to sustain this learning into their careers. The Accreditation Council for Pharmacy Education has recognized the need for development of these communicative skills for pharmacy providers, as these changes are seen in the latest update to their standards. Empathy interventions have been varied across the literature, and many have shown successful improvement in empathy scores. The purpose of this study is to determine if a complex patient simulation activity impacts students’ empathy scores.

METHODS: Pharmacy students in their 3rd or 4th professional year that are enrolled in the Advanced Primary Care Clerkship, Ambulatory Care Elective, will be invited to participate in this study. The Kiersma-Chen Empathy Scale is a validated empathy assessment tool that will be utilized to measure students’ empathy scores. The survey will be taken by participating students before the simulation, and immediately following the week-long simulation. Students participating in this study will be randomized to two patient simulations, and will follow directions in simulating a complex medication, lifestyle, and monitoring regimen during a one-week period. Empathy scores pre-simulation and post-simulation will be evaluated.

RESULTS: Results are pending.

CONCLUSION: Conclusion is pending.

PL V-7
QTC INTERVAL MONITORING FOR CHRONIC AZITHROMYCIN THERAPY IN PATIENTS WITH CYSTIC FIBROSIS. Rachel Sharpston, Michelle Condren, Katherine O’Neal, Ann Lloyd, Heather McIntosh, University of Oklahoma Health Sciences Center College of Pharmacy, Tulsa, OK.

PURPOSE: The purpose of this study is to examine the local practices of obtaining ECGs to monitor patients with cystic fibrosis (CF) at risk for QTc prolongation with newly initiated and chronic azithromycin therapy. This project aims to identify the number and type of potential QTc prolonging risk factors present, the percent of patients receiving baseline and follow-up ECGs, and the presence of QTc prolongation when ECGs are obtained.

METHODS: This retrospective review utilized patient medical records from a CF clinic from April 1, 2014 to October 1, 2015. Patients greater than 6 years old with a clinic visit during this time frame were divided into those initiating chronic azithromycin therapy and those currently receiving chronic azithromycin therapy. Patients were further divided into groups by the number of QTc prolonging risk factors present which included hypokalemia; female gender; past medical or family history of heart disease; and/or concomitant use of long acting beta agonists, antidepressants, ondansetron, antipsychotics, and/or azole antifungals. The percentage of patients with and without baseline and follow-up ECGs for the number of risk factors present will be determined. QTc intervals will be reported from the ECGs, and classified as normal, borderline, or elevated. This study has been approved by the University of Oklahoma and the Saint Francis Hospital System Institutional Review Boards.

RESULTS: Half of the patients (49.5%) had no risk factors for QTc prolongation, 26.3% had 1 risk factor, 54.6% had 2 to 4 risk factors, and 1% had 5 risk factors. Frequency of individual risk factors were as follows: female gender (n = 30), long-acting beta agonists (n = 27), family history of heart disease (n = 9), selective serotonin reuptake inhibitors (n = 5), hypokalemia (n = 4), past medical history heart disease (n = 3), and antipsychotic (n = 1).

CONCLUSION: The majority of patients did not have risk factors for QTc prolongation, and the highest number of risk factors per patient was five. The most common risk factor was female gender, and the most common concomitant QTc prolonging medications were long-acting beta agonists. ECG monitoring and QTc interval data are pending at this time. As azithromycin is used chronically in cystic fibrosis, it continues to be important to study the benefits and risks associated with this therapy.

PL V-8
PRIMARY CARE PHYSICIAN AND STAFF PERCEPTIONS OF AN OUTPATIENT HYPERGLYCEMIA PROTOCOL. Angela Mechelay, Becky Armor, Todd Marcy, Dewey Scheid. University of Oklahoma College of Pharmacy, Oklahoma City, OK.

BACKGROUND: Hyperglycemic crisis, diabetic ketoacidosis and hyperglycemic hyperosmolar syndrome, contribute significantly to the annual cost of diabetes mellitus and are often managed by hospitals and emergency departments (ED). Nationally recognized hyperglycemia management protocols only exist for hospital settings, with outpatient protocols showing success in pilot studies. The University of Oklahoma Health Sciences Center Family Medicine Center (OU FMC) developed, piloted, and made available a symptom-based outpatient hyperglycemia protocol. In the pilot study, the protocol lowered blood glucose to less than 300 mg/dL within 4 hours in 74% of those with a starting blood glucose of greater than 400 mg/dL – effectively preventing ED visits or hospital admissions in these patients. Since the initial pilot study, the utilization of the protocol has yet to be evaluated. It is likely the use of the protocol varies between medical attendings, medical residents, and midlevel practitioners due to differences in familiarity with the form. Evaluating provider and staff perceptions of the hyperglycemia protocol may help provide details on when the protocol is used, which providers use the protocol, and current barriers to the protocol’s utilization.

OBJECTIVE: The primary objective of this study is to describe primary care physician and staff perceptions of an outpatient hyperglycemia protocol. A secondary objective for this study is to obtain feedback about the protocol to improve consistency and frequency of use.
METHODS: The study consists of a single, 17 question survey component, administered electronically to participants from March 1, 2016 to March 31, 2016. The target population includes health care providers and staff members ≥ 18 years of age at the OU FMC. The format of the survey constitutes a combination of multiple choice, yes/no questions, fill-in questions, and differential semantic questions based on a 5 point Likert scale. Questions assess demographics, opinions, attitudes, and basic knowledge about specific components of the hypoglycemia protocol.

RESULTS: Study results are pending data analysis.

CONCLUSION: The survey will help define primary care physician and staff perceptions, utilization, and basic understanding of the hypoglycemia protocol. This study will increase provider awareness of the existence of the symptom-based hypoglycemia protocol, with the hope to improve utilization, patient outcomes, and reduce diabetes care related costs.

PL V-9
IMPACT OF A MENTAL HEALTH PHARMACIST ON PRIMARY CARE IN A FEDERALLY QUALIFIED HEALTH CENTER, Germaine Williams, Phillip Lai, Aida Garza, Michelle Nguyen, Jamie C. Barner, Benita Bamgade, University of Texas at Austin College of Pharmacy/CommUnityCare Health Centers, Austin, Texas.

Shortages of health care providers and funding for mental health services present a difficult challenge for communities across the country. Literature evaluating the impact of a clinical pharmacist in the outpatient mental health setting is limited. In a network of Federally Qualified Health Centers (FQHCs) in Travis County, Texas, clinical pharmacy specialists can adjust, initiate, and discontinue several medication classes, including antidepressants, under a collaborative drug therapy management agreement.

The purpose of this study is to evaluate the clinical interventions made by a pharmacist for patients treated for mental health conditions in a FQHC.

A retrospective chart review will be conducted using data collected from the FQHC electronic health records database. Patients aged eighteen years and older who kept at least one appointment with the mental health clinical pharmacist will be included in the study. This period spans 2012-2015. Patients to be excluded from the study are those who are prisoners and pregnant patients. Information to be collected will include demographics, medications, laboratory values, ratings on standardized assessment scales, and documented interventions made by the clinical pharmacist. Descriptive statistics will be used to analyze the data collected and evaluate the patient population.

VI-1
DURATION OF MECHANICAL VENTILATION IN PATIENTS IN INTENSIVE CARE UNIT PATIENTS TREATED WITH BENZODIAZEPINE VS. NON-BENZODIAZEPINE BASED SEDATION. Elizabeth Franco, Garbo Mak, Shekhar Patil, Brian Gulbis, Jennifer Cortes., Memorial Hermann- Texas Medical Center, Houston, TX.

PURPOSE: Patients in the intensive care unit (ICU) can experience significant pain and anxiety while from endotracheal intubation, mechanical ventilation (MV), and many other sources. Because of this, patients may become agitated and cause self harm. Therefore, patients generally require analgesics and sedatives. Most patients should be started on a regimen known as analgosedation which focuses on managing pain and discomfort before sedation. Currently, there are no studies that compare patients who received combination sedative therapies, including analgosedation, with either benzodiazepine (BZD) or non-benzodiazepine (NBZD) based sedation. This study aims to determine if there is a difference in duration of MV in patients who received either of these therapies.

METHODS: Using data retrospectively collected from the institution’s electronic records, we evaluated patients admitted to the medical intensive care unit (MICU) between July 2012 and August 2015. These patients required MV for greater than 24 hours and were treated with either BZD or NBZD based sedation.

RESULTS: Data analysis is on-going. These are preliminary results for 455 patients. Our patient list was based on the inclusion and exclusion criteria however based on further review of these patients we are have to exclude some patients for reasons including persistent seizures and post cardiac arrest. From all patients originally considered to have met inclusion and exclusion criteria, there was no difference in genders between the two groups, 47.5% men in the BZD group vs. 44.6% men in the NBZD group (p=0.543). There was however, a significant difference in the average age in years between BZD and NBZD 56.3 vs. 62.8 (p <0.001), respectively. As for ICU and hospital length of stay, there were no significant differences in median length of stay in days between the two groups 4.01 BZD vs. 3.75 NBZD (p = 0.297) and 8.96 BZD vs. 7.58 NBZD (p=0.34), respectively.

CONCLUSION: Data collection is on-going and conclusions are pending complete analysis. Based on the interim data, NBZD based sedation does not seem to have a benefit over BZD based sedation in regards to ICU LOS or hospital LOS.

VI-2
ATTAINMENT OF TARGET ANTI-XA LEVELS IN PATIENTS WITH ACUTE KIDNEY INJURY REQUIRING CONTINUOUS RENAL REPLACEMENT THERAPY. Kellee Brown, Rachel Williams, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA, Additional Authors: Rachel Williams.

PURPOSE: Continuous renal replacement therapy (CRRT) is utilized in critically ill patients with acute kidney injury due to its better hemodynamic tolerability and more efficient clearance of solute. When systemic anticoagulation is required in a patient receiving CRRT, optimal choice of anticoagulant is controversial.
Enoxaparin is frequently utilized in these patients due to its ease of administration and the ability to monitor its efficacy by measurement of anti-Xa levels. Literature currently supports specific target anti-Xa values based on the indication for anticoagulation. The purpose of this study is to evaluate the ability of currently employed enoxaparin dosing strategies to attain target anti-Xa levels in critically ill patients requiring CRRT.

**METHODS:** This retrospective study was submitted to the Institutional Review Board for approval. Adults newly initiated on CRRT and receiving concomitant anticoagulant therapy with enoxaparin were included in this study. Anti-Xa levels were obtained four hours after administration of enoxaparin on the second day of therapy and results were assessed to determine if level was within the pre-specified therapeutic range. The primary outcome measure was attainment of target anti-Xa levels and secondary outcomes assessed the rate of major and minor bleeding events and the rate of thromboembolic events. Data collected included: age, gender, height, weight, serum creatinine, event precipitating acute renal insufficiency, type of CRRT, enoxaparin dose, enoxaparin indication, history of coagulopathy or thromboembolic event, anti-Xa level, timing of anti-Xa level (minutes drawn after dose administration), platelets, hemoglobin, hematocrit, objective diagnosis of thromboembolic event, bleeding events. Results will determine if current dosing strategies utilized in CRRT patients in our facility are efficacious.

**RESULTS:** Pending.

**CONCLUSION:** Pending.

## VI-3

**DETECTING THE FREQUENCY AND SEVERITY OF PAROXYSMAL SYMPATHETIC HYPERACTIVITY IN TRAUMATIC BRAIN INJURY PATIENTS USING ASSESSMENT TOOLS.**  Monica Lee, Sophie Samuel, Memorial Hermann – Texas Medical Center, Houston, Texas.

**Purpose:** Paroxysmal sympathetic hyperactivity (PSH) is a neurological condition that occurs most frequently in the setting of traumatic brain injury (TBI), and is characterized by simultaneous episodes of tachycardia, hypertension, tachypnea, hyperthermia, diaphoresis, and motor posturing. Early recognition of PSH is crucial because of its association with greater morbidity, higher healthcare costs, longer hospitalization, and worse outcomes. A recent consensus statement published the official clinical nomenclature and diagnostic criteria based off of a systematic literature review. This publication provided assessment measurement tools in order to allow clinicians to be able to predict the severity of symptoms and diagnostic likelihood of PSH. The purpose of this study is to determine the incidence and severity of paroxysmal sympathetic hyperactivity in traumatic brain injury patients using assessment tools.

**Methods:** This is a single center retrospective cohort study over 12 months. Eligibility criteria included patients over the age of 18, admission to the Neurointensive care unit at Memorial Hermann in the Texas Medical Center with an admission diagnosis of TBI and a length of stay of 14 days or longer. Data collection parameters are based off of the two assessment tools published in the 2014 consensus statement and collected via retrospective medical record review with an anticipated sample size of 70 patients.

**Results:** Comprehensive analysis will be done after completion of data collection. The data collection included two assessment tools: a clinical feature scale (CFS) and a diagnostic likelihood tool (DLT). The CFS determines the severity of PSH symptoms while the DLT determines the probability of the diagnosis. The primary endpoints will be the incidence and severity of PSH, while the secondary endpoints will be mortality, medication use, and length of stay.

**Conclusion:** This study result will show incidence and severity of PSH for adult patients admitted to the Neurointensive care unit with TBI pending the completion of data collection and statistical analysis.

## VI-4

**NEW METFORMIN PRESCRIBING RECOMMENDATION: EVALUATING METFORMIN USE BASED ON ESTIMATED GLOMERULAR FILTRATION RATE OVER TRADITIONAL SERUM CREATININE CONTRAINDICATIONS.** Vivian Bui, Alyssa Wanner, Shamama Burney, Tyson Kubena, West Texas Veterans Affairs Health Care System, Big Spring, TX.

**Purpose:** Most current international diabetes guidelines have transitioned to metformin dosing adjustments based on estimated glomerular filtration rate (eGFR) instead of serum creatinine (SCr). However, in the United States, the Food and Drug Administration (FDA) continues to contraindicate metformin use based on elevated serum creatinine levels. At the West Texas Veterans Affairs Health Care System (WTVAHCS), healthcare providers generally discontinue metformin when SCr is 1.4 mg/dL or greater. The primary objective of this quality improvement study is to determine how many more patients would be candidates for metformin therapy based on the eGFR cutoff of less than or equal to 30 mL/min/1.73m². The secondary objectives include determining how many more antidiabetic agents are added to regimen to get A1c to goal (including utilization of restricted-use and non-formulary agents), change in A1c after the discontinuation of metformin, and change in cost per diabetes regimen after discontinuation of metformin.

**Methods:** This quality improvement study was approved by the Pharmacy and Therapeutics (P&T) Committee. A retrospective chart review of the WTVAHCS patients designated with ICD 9 codes of diabetes or diagnosis of diabetes per 2010 Veterans Affairs/Department of Defense (VA/DoD) guideline was performed. An electronic medical record search identified patients with an active metformin prescription that was discontinued between August 2013 to August 2015 due to SCr greater than or equal to 1.4 mg/dL. Patients with type 1 diabetes, polycystic ovary syndrome, or those residing in the domiciliary were excluded. The following data were collected: patient gender, age, eGFR, and additional lab parameters both before and after discontinuation of metformin (SCr, A1c, and fasting blood sugar). All data was recorded without patient identifiers and maintained confidentially. The results will be shared with P&T Committee with the intention of gaining approval to utilize metformin based on eGFR instead of SCr.

**Results:** According to the proposed metformin protocol, 89 patients met the inclusion criteria with 90% (n=80) qualifying to remain on metformin therapy. Of the 89
patients, 1.1% (n=1) of patients would continue metformin and monitor renal function annually. 46.1% (n=41) would continue metformin use and monitor renal function every 3-6 months, 42.7% (n=38) would reduce metformin dose to a maximum dose of 1,000 mg per day and closely monitor renal function every 3 months, and 10.1% (n=9) of metformin prescriptions were appropriately discontinued. Results of the secondary objectives will be presented at the TSHP Alcalde Southwest Leadership Conference in Frisco, TX in April 2016.

Conclusions: Approximately 90% of the West Texas Veterans Affairs Health Care System patients that were included would qualify to restart metformin therapy according to the proposed metformin protocol. Results for the secondary objectives will be presented at the TSHP Alcalde Southwest Leadership Conference in April 2016.

VI-5
COMPARISON OF EVIDENCE BASED ALBUMIN UTILIZATION GUIDELINE. Tracy M Hudson, Ngoc Vu, Katherine Jennings, Kyle Davis, Jason Chou, Ochsner Medical Center, New Orleans, LA.

PURPOSE: Albumin is utilized for a wide variety of indications, some of which are not supported by current evidence. Our institution does not currently restrict the use of albumin. The objective of this study was to compare albumin utilization before and after implementation of an evidence-based guideline on appropriate albumin indications and dosing.

METHODS: This was a quasi-experimental project consisting of a retrospective chart review of selected patient data to determine the baseline percent of appropriateness of albumin use between the two study periods. The primary outcome was the appropriateness of albumin use based on an evidence-based guideline. Educational presentations on appropriate indications for albumin use were given to the internal medicine and surgical residents in October 2015. Patients were included if greater than 18 years old and received albumin 5% or 25%. Furthermore, patients were included if albumin was prescribed by any medicine, transplant, or surgery service, or in any intensive care unit at Ochsner Medical Center in the months of November 2014 and November 2015. Albumin indications and dosing were compared between the pre- and post-intervention groups. Exclusion criteria included pregnancy, age < 18 years of age, intra-operative albumin use, and burn victims.

RESULTS: Comparing the pre- and post-intervention periods, there was no difference in the two groups in average age (59.6±14.5 vs. 59.9±13.0, p=0.81), average weight (84.1± 21.0 kg vs. 82.7± 26.3 kg, p=0.60), and ICU status (69.9% vs. 79.1%, p=0.05). The overall rate of inappropriate albumin use was 79.4% (pre-group: 75.5%, post group: 84.3%, p=0.04). The most common indication was “other”, followed by hypovolemia/septic shock, and cardiothoracic surgery. The top 3 ordering service lines were surgical intensive care unit (ICU), Neuro ICU, and liver transplant. There was no difference in-hospital mortality (6.6% vs. 5.2%, p=0.96) or 30-day mortality (14.3% vs. 17.7%, p=0.39); however, there was a difference in average length of stay (21.2 vs. 17.3, p < 0.006). The estimated annualized cost of albumin use for the selected population was approximately $737,424.

CONCLUSION: The majority of albumin use in the selected patients was inappropriate. Improving albumin use remains an area of opportunity at our institution. Additionally, service lines with copious inappropriate albumin use were identified for future interventions.

VI-6
DEMENTIA RATES IN GERIATRICS TAKING OXYBUTYNYL VS TROSPUIUM (DOT Study). Elaine Lo, Brittany Johansen, Rick Weideman, Bert Little, Veterans Affairs North Texas Health Care System and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, TX.

BACKGROUND. By the year 2030, an estimated 72 million people will be over the age of 65. Unfortunately, aging increases the prevalence of a variety of conditions, leading to decreased quality of life. One such condition is overactive bladder syndrome (OAB), which is comprised of lower urinary tract symptoms. OAB is most commonly treated with anticholinergics, which are also a major culprit for medication-induced dementia. Dementia involves the deterioration in memory, thinking, behavior, and the ability to perform everyday activities. It is one of the leading causes of disability and loss of independence. Oxybutynin, one of the most commonly used anticholinergics, leads to adverse cognitive effects by affecting muscarinic receptors in the brain. Alternatively, trospium may cause lower incidences of dementia due to decreased permeability across the blood-brain barrier. While studies have shown the effects of trospium and oxybutynin on cognitive function, none specifically address the effects of either medication on rates of dementia. Currently, trospium is non-formulary at the Veteran Affairs North Texas Health Care System (VANTHCS) and is only prescribed in patients who are intolerant to oxybutynin. Results from this study may indicate the potential for initiating trospium early in therapy for the treatment of OAB to minimize medication-induced dementia.

OBJECTIVES. To investigate the effects of trospium compared to oxybutynin on dementia rates, while exploring efficacy and tolerability of the agents.

METHODS. This retrospective cohort study is being conducted at the Dallas VA Medical Center. All patients with OAB, who are 18 years of age or older and have initiated trospium due to cognitive decline from oxybutynin, were included in this study. General demographic information will be collected along with the following information: dates of therapy, previous history of dementia, medication list, refill history, medication dose adjustments, prior history of alternative OAB treatments, OAB drug therapy changes, serum creatinine, incontinence episodes, post-void residual, and side effects – dry mouth, blurred vision, urinary retention, tachycardia and constipation. Dementia screening results will also be collected, if available. Nominal data will be analyzed using the chi-square test or the McNemar’s test. Ordinal data will be analyzed using the Mann-Whitney U or the Wilcoxon signed rank test. Continuous data will be analyzed using the student’s t-test or paired student’s t-test.

RESULTS. Retrospective data collection is ongoing.

CONCLUSION. Conclusions to be presented following data collection.
**VI-7**

**A COMPARISON OF PAIN MANAGEMENT IN PEDIATRICS POST-TONSILLECTOMY: RETROSPECTIVE REVIEW.** Nancy Johnson, McLane Children’s Hospital, Temple, Texas.

**Purpose:** Tramadol inhibits reuptake of serotonin and norepinephrine centrally and binds with mu receptors to modulate pain response and perception. Due to its analgesic qualities, it is used for mild to moderate pain control. In 2014, our hospital saw increases in the prescribing of tramadol for post-tonsillectomy outpatient pain control. Approximately 7-8% of the population exhibits ultra-rapid or poor metabolizing of CYP2D6 which compromises its intended analgesic effect. Tramadol is primarily metabolized by CYP2D6 and CYP3A4 which may lead to variable pain control. The purpose of the study is to compare the adequacy of analgesics based on utilization and outcomes for outpatient pain control post-tonsillectomy.

**Methods:** This Institutional Review Board approved retrospective chart review includes patients who underwent tonsillectomy and received outpatient pain management between March 2014 to April 2015. Inclusion criteria will be as follows: patients 18 years or younger, having a tonsillectomy and/or adenoidectomy procedure at McLane Children’s Hospital and receiving medication for postoperative pain management. Patients who were required admission for observation into the hospital floor for any duration longer than twelve hours that may be due to complications with the procedure will be excluded. The following data points will be retrospectively collected from patient records: surgery type, time of pain medication administration and type of pain management length of hospital stay, pain scores, and then outpatient pain prescriptions given and the dose and duration of that analgesic of this prescription. The primary outcome evaluated will be number of patients who requested and given a new prescription. The secondary outcomes include the documented reason for new prescription and any reports of adverse drug effects.

**Results:** Data collection in progress

**Conclusions:** Pending

**VI-8**

**IMPACT OF A PAIN, AGITATION, AND DELIRIUM PROTOCOL FOR MECHANICALLY VENTILATED PATIENTS WITHIN A COMMUNITY HOSPITAL.** Annilee Miller, Julin Thomas, Anh Vu, Vy P. Pham, Memorial Hermann Hospital System, Houston, TX.

**Purpose:** Mechanically ventilated patients make up one-third of intensive care units (ICU) across the United States. Mechanical ventilation (MV) has been associated with higher doses of sedatives, which leads to increased duration of MV, ICU and hospital length-of-stay. The purpose of this study is to evaluate the impact of a pain, agitation, and delirium (PAD) protocol in mechanically ventilated patients within a closed, community medical ICU.

**Methods:** This retrospective cohort study evaluating pre- and post- implementation of a PAD protocol is being conducted from January 1, 2015 to May 31, 2016. Institutional Review Board with waiver of informed consent was obtained prior to initiation of this study.

Patients at least 18 years of age and admitted to the medical ICU are included in this study. Patients who are mechanically ventilated less than 24 hours, post cardiac arrest, with major neurological deficits, requiring neuromuscular blockers, in alcohol withdrawal, or transferred from another hospital who are mechanically ventilated are excluded from the study. The primary outcome is the duration of MV. The secondary outcomes are ICU and hospital LOS, in-hospital mortality rate, and self-extubation rate.

**Results:** A total of 320 patients were reviewed for the pre-protocol data analysis from January 1, 2015 to May 31, 2015. Of those, 142 patients met inclusion criteria and were randomized to a total of 100 patients aged 65 ± 15.9 years (51% female). The median (interquartile range, IQR) for the duration of MV was 5.1 (2.7-8.1) days. The median ICU LOS and hospital LOS were 6.7 (4.3-10.6) days and 10.8 (6.4-16) days, respectively. The in-hospital mortality rate was 9% and the self-extubation rate was 6%.

**Conclusions:** Pending

**VI-9**

**USE OF ANTIPSYCHOTICS FOR THE MANAGEMENT OF DELIRIUM IN THE INTENSIVE CARE UNIT.** Soyoun Kim, DeeDee Hu, Memorial Hermann Memorial City Medical Center, Houston, TX.

**Purpose:** To evaluate the safety and efficacy of antipsychotic use in the Memorial Hermann Memorial City Medical Center intensive care units for the treatment of delirium. Delirium in the ICU is a phenomenon that can be present in up to 80 percent of critically ill patients. It has been independently associated with deleterious effects including longer ICU and hospital stay. The 2013 guideline for the management of pain, agitation, and delirium in the ICU states that although antipsychotics may reduce the duration of delirium, more trials are needed to address the benefit of antipsychotics in this population.

**Methods:** This single-center, retrospective, cohort study has been approved by the Institutional Review Board. Adult patients with delirium in the intensive care units from July 2014 to December 2015 were identified using ICD-9 and ICD-10 diagnosis codes. Electronic medical records were reviewed for patient characteristics and inclusion into this study. Patients who received antipsychotics in the ICU are compared to patients who did not receive antipsychotics. Primary efficacy outcome measure is length of stay in the ICU. Additional outcome measures include antipsychotic dose and duration, length of stay in the hospital, duration of mechanical ventilation, and use of sedatives and analgesics. Measures of safety outcomes include adverse drug events such as QTc prolongation, episode of torsades de points, extrapyramidal symptoms, hyperglycemia, and in-hospital mortality. The data is collected through electronic or manual extraction, and findings are entered into a database. Descriptive statistics will be used to recognize possible benefit or harm associated with the use of antipsychotic agents in patients in the intensive care unit with delirium.

**Results:** N/A

**Conclusion:** N/A
VI-10
RISK FACTORS FOR ICU DELIRIUM IN A GERIATRIC VETERAN POPULATION. Heidi N. Michaels and Steven E. Pass, Dallas Veterans Affairs Medical Center and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, Texas.

PURPOSE: The purpose of this study was to identify risk factors associated with ICU delirium in elderly patients. Age is an independent risk factor for delirium in the ICU, with an increased risk for delirium as age increases. While there have been several studies defining risk factors for delirium of the elderly population in the medical wards, none of these studies were conducted in the ICU where the prevalence for delirium is as high as 80%. To the authors’ knowledge, there is currently no research that defines risk factors for ICU delirium in a geriatric Veteran population.

METHODS: Data was collected retrospectively using the institution’s Computerized Patient Record System (CPRS). Patients were included if they were 65 years of age or older and if they were admitted to the medical ICU or cardiac ICU services from July 1, 2010 to June 30, 2015. Patients were excluded if they had delirium at ICU admission, alcohol withdrawal, cardiothoracic surgery, acute brain injury, multiple admissions involving ICU delirium during the study period, or if they were discharged from the ICU in 48 hours or less. Data collected includes age, gender, height, weight, ICU admission diagnosis, length of time in ICU, delirium diagnosis, use of restraints, Sequential Organ Failure Assessment (SOFA) score, pre-ICU emergency trauma or surgery, APACHE II score, mechanical ventilation, metabolic acidosis, coma, E-PREDELIRIC score, and PREDELIRIC score. Additional medication-related data collected includes use of benzodiazepines, opiates, propofol, tricyclic antidepressants, steroids, histamine 2 receptor antagonists, meperidine, and sedative hypnotics. The outcomes will be assessed through a univariate analysis to look for risk factors, then a multivariate analysis to look for independent risk factors.

RESULTS: Pending completion of data collection.

CONCLUSION: Pending results.

VI-11

PURPOSE: Medication use for rapid sequence intubation is relatively consistent. However, appropriate timing of post-intubation sedation has been of concern. The purpose of this study was to assess the time to initiation of post-intubation sedatives and safety associated with these agents, including, potential obstacles preventing appropriate timing of these medications, and adverse physiological effects within the first 60 minutes post-intubation.

METHODS: This was a retrospective, observational study evaluating patients who were intubated in the emergency department (ED) at a large tertiary-care teaching hospital from July 1, 2014 to June 30, 2015. Those who were known to be pregnant, not intubated, or intubated prior to presenting to the ED were excluded from the study. Patients were selected through ED automated medication dispensing cabinet inventory reports for succinylcholine and rocuronium during the study period.

RESULTS: A total of 302 patients were identified from the ED automated medication dispensing cabinet reports as possible recipients of a neuromuscular blocker. Of the 302 patients, 203 met inclusion criteria and 200 of these patients were randomly selected for review. Seventy-two percent of patients received post-intubation ventilator sedation, while 28% of patients did not receive post-intubation ventilator sedation while in the ED. The mean time to the initial intermittent sedative dose was 49 ± 43 minutes, while the mean time to continuous infusion sedation with or without intermittent doses was 39 ± 43 minutes. Using one-way ANOVA, the mean maximum change in heart rate (HR), systolic blood pressure (SBP), and mean arterial pressure (MAP) during the first 60 minutes post-intubation were compared between no sedation vs. intermittent sedation (HR -2.8 vs. -9.5, SBP -14.3 vs. 1.7, MAP -8.3 vs. 0.7), no sedation vs. continuous sedation (HR -2.8 vs. -3.2, SBP -14.3 vs. -10.3, MAP -8.3 vs. -7.7), and intermittent vs. continuous sedation (HR -9.5 vs. -3.2, SBP 1.7 vs. -10.3, MAP 0.7 vs. -7.7) groups. There were no statistically significant differences (p > 0.05) between the comparators. Of the patients reviewed, only 4 had a documented Richmond Agitation-Sedation Score (RASS) while in the ED.

CONCLUSION: Ventilator sedation practices in the ED following intubation were found to be appropriate based on comparative maximum change in HR, SBP, and MAP. Timing of post-intubation sedation coincides with previous studies. Delays in sedative administration due to unavailability of medications were not observed.

VI-12
EVALUATING THE BENEFITS OF UTILIZING DRONABINOL IN THE TREATMENT OF CHRONIC PAIN PATIENTS: A RETROSPECTIVE COHORT STUDY. Jessica S. Pabon, Emily E. Davies, Justin Boge, and Benjamin M. Keizer. San Antonio Military Medical Center (SAMM), Fort Sam Houston, TX.

PURPOSE: To evaluate change in Oral Morphine Dose Equivalence (OMDE) in patients prescribed dronabinol for the treatment of chronic pain. Chronic opioid therapy (COT), although controversial, has been the mainstay treatment for most chronic pain (CP) diagnoses. Over time, increased research evidence has shown an escalated risk of serious harm associated with long term use of COT can outweigh benefits

METHODS: Retrospective data was collected from 76 patients utilizing two Electronic Health Record chart review systems during the time frame of Jan 2015-Dec 2015 being treated at Brooke Army Medical Center Pain Management Clinic and the Moreno Primary Warrior Transition Unit (WTU) Clinic. The therapeutic differences of OMDE before and after dronabinol treatment were measured utilizing the daily narcotic doses prescribed, the Defense Veteran Pain Rating Scale (DVPRS) scores, Chronic Opioid Misuse Measurement (COMM) score, and the Post-traumatic Checklist (PCL) score. Additionally, an Analysis of Variance (ANOVA) will compare the patients’ pain types (somatic, visceral, and neuropathic) in
VI-13
SAFETY AND EFFICACY OF THE CONCURRENT USE OF LONG-ACTING INJECTABLE AND ORAL ANTIPSYCHOTICS IN THE TREATMENT OF SCHIZOPHRENIA AND SCHIZOAFFECTIVE DISORDER IN VETERANS. Monica L. Mathys, Andrew W. Young. Veteran Affairs North Texas Healthcare Center, Dallas, TX.

PURPOSE: Define the frequency of the prescribing practice of antipsychotic polypharmacy involving the use of concurrent long-acting injectable and oral antipsychotics. Assess the safety and efficacy of this practice amongst the veteran population by comparing patients' severity of illness and propensity of side-effects while on monotherapy versus polypharmacy.

METHODS: Retrospective chart review was performed between January 1, 2010 and December 31, 2014 to observe rates of concurrent long-acting injectable and oral antipsychotic use. Patients served as their own control to compare severity of disease and adverse-effects while on monotherapy and after a second antipsychotic was added. Patients were observed for 6 months, until change of therapy, or psychiatric hospitalization. Concurrent therapy had to occur for ≥60 days to prevent inclusion of those on transient polypharmacies or oral overlap.

RESULTS: Results currently pending with 70+ patients included. The majority of patients on polypharmacy and treated with a long-acting injectable have been on a long-acting injectable and oral antipsychotic of the same type.

CONCLUSION: Conclusion currently pending.

VI-14
AN EVALUATION OF COMBINATION THERAPY WITH BENZODIAZEPINES AND SELECTIVE SEROTONIN REUPTAKE INHIBITORS IN THE TREATMENT OF POST-TRAUMATIC STRESS DISORDER. Monica Mathys and Meghan Duquette, VA North Texas Health Care System and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, Texas.

BACKGROUND: The role of benzodiazepines in the treatment of post-traumatic stress disorder (PTSD) remains controversial, despite being considered relatively contraindicated by the VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress. More than 30% of veterans with PTSD continue to receive benzodiazepines. Selective serotonin reuptake inhibitors (SSRIs) are considered first line therapy according to the VA/DoD Guideline for the Management of PTSD. Other medications, including the selective serotonin and norepinephrine reuptake inhibitors (SNRIs), specifically venlafaxine, monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants, benzodiazepines, antipsychotics, and anticonvulsants have been studied for the treatment of PTSD with variable and limited effect. The rationale behind the use of benzodiazepines in PTSD is in that PTSD shares many symptoms with anxiety disorders, especially anxiety and insomnia, which are effectively treated with benzodiazepines. Multiple clinical trials have investigated the effect of benzodiazepines on symptom management; however the vast majority of these studies have investigated benzodiazepines as monotherapy. Additionally, many of these studies are limited by small sample sizes and open label study designs. The results of these trials have thus far been variable as to the efficacy of this class of medications in the treatment of PTSD.

OBJECTIVES: The purpose of this study is to evaluate the improvement seen by patients who remain on combination therapy with an SSRI and a benzodiazepine versus patients on SSRI monotherapy following benzodiazepine discontinuation.

METHODS: Patients were identified through a retrospective search of medication records dated from 11/1/2010 to 8/1/2015 within the VA North Texas Health Care System. Veterans were included if they had been prescribed a benzodiazepine and SSRI concomitantly during the study period and either remained on combination therapy or had the benzodiazepine component discontinued after an adequate trial of SSRI therapy. Patient demographic information including period of service, comorbid psychiatric conditions, concomitant psychotherapy, and history of substance and/or alcohol abuse was collected. The primary endpoint is clinical improvement of symptoms of PTSD.

RESULTS: Retrospective data collection and analysis currently in progress.

CONCLUSIONS: Conclusions to be presented following completion of data collection and analysis.

VI-15
ANTI-EPILEPTIC PROPHYLAXIS IN TRAUMATIC BRAIN INJURY (TBI) – A COMPARISON OF FOSPHENYTOIN/PHENYTOIN VS. LEVETIRACETAM. Monica Sharma, Jeff Abrahamson, Methodist Dallas Medical Center, Dallas, TX.

PURPOSE: The use of phenytoin for prophylaxis of early onset seizures following a traumatic brain injury (TBI) has been well established. The objective of this study is to compare the incidence of early onset seizures following traumatic brain injuries when using fosphenytoin/phenytoin vs. levetiracetam for prophylaxis.

METHODS: Data was retrospectively collected from electronic medical records of patients suffering traumatic brain injury and subsequently receiving seizure prophylaxis with either phenytoin or levetiracetam. If a seizure threshold lowering medication or a medication that can significantly decrease phenytoin concentrations was used concomitantly, this information was documented as well. Occurrence of seizures were confirmed by a retrospective review of provider documentation, nursing notes and when available, EEG reports.

RESULTS: A preliminary analysis was performed using a sample population of 39 patients (levetiracetam n = 30; phenytoin n = 9). Based on the interim data, patients receiving phenytoin for seizure prophylaxis following a traumatic brain injury (TBI) were 3.625 times more likely to suffer a seizure when compared to patients receiving levetiracetam (OR 3.625, 95% CI 0.23 – 57). It is important to note that patients were not divided equally among each arm and these findings were not statistically significant (p = 0.4130).
CONCLUSION: Based on the interim analysis, patients receiving phenytoin for seizure prophylaxis following a traumatic brain injury (TBI) are more likely to suffer a seizure than those receiving levetiracetam for the same indication. Due to power analysis not being met in either arm, these results are not conclusive. The data does show a trend in favor of levetiracetam use as opposed to phenytoin at our institution.

VI-16
A RETROSPECTIVE ANALYSIS OF BOLUS VERSUS CONTINUOUS DOSING OF HYDROCORTISONE IN SEPTIC SHOCK PATIENTS. Erica Wilson, Javier Flores-Guardado, James Palmer, Ramzie Lujan, Anushi Bulumulle, Angel Tejada; Medical Center Hospital, Odessa, Texas.

PURPOSE: The purpose of this study is to look at clinical outcomes such as mortality, length of stay, and days to resolution of shock when comparing continuous versus bolus dosing of hydrocortisone in septic shock patients.

METHODS: Retrospective collection of data from the institution’s electronic records.

RESULTS: An interim analysis of 86 patients was performed and data is currently being analyzed using appropriate statistical analysis. Patient baseline demographics such as age, weight, height, race, co-morbidities, initial vasopressor used, suspected source of infection, vitals, Sepsis-related Organ Failure Assessment scores, and labs including infectious and inflammatory markers, glucose and hemoglobin A1c were collected. Primary clinical outcomes to be assessed include mortality, length of stay, and days to resolution of septic shock. Secondary outcomes consist of hyperglycemic and hypoglycemic episodes and insulin requirements.

CONCLUSION: Currently at Medical Center Hospital, bolus dosing of hydrocortisone is most often used for septic shock patients. Bolus dosing of hydrocortisone, although not currently recommended by the Surviving Sepsis guidelines, offers advantages such as ease of administration and also frees up intravenous lines for the nursing staff. We hypothesize that both continuous and bolus dosing of hydrocortisone may aid in effectively treating septic shock patients without unwanted adverse or clinical outcomes. Study conclusion pending completion of statistical analysis.

VI-17
LEVETIRACETAM VERSUS (FOS)PHENYTOIN FOR EARLY ONSET POST-TRAUMATIC SEIZURE PROPHYLAXIS IN PEDIATRIC PATIENTS. Luke A. Neff, Colleen Barthol, Nicole Greene, Department of Pharmacy, University Health System, San Antonio, TX, Department of Pharmacy, University Health System, San Antonio, TX; Pharmacotherapy Division, College of Pharmacy, The University of Texas at Austin, Austin, TX; Pharmacotherapy Education & Research Center, University of Texas Health Science Center at San Antonio, San Antonio, TX.

PURPOSE: Current pediatric traumatic brain injury (TBI) guidelines recommend prophylactic treatment with (fos)phenytoin for the prevention of early post traumatic seizure (PTS), defined as seizure activity within the first seven days after TBI. Levetiracetam is commonly used in clinical practice for these patients, despite the lack of evidence. The objective of this study is to compare the efficacy and safety of levetiracetam to (fos)phenytoin for use in early PTS prophylaxis in pediatric patients with TBI.

METHODS: In this retrospective chart review, electronic medical and pharmacy billing records were used to identify patients 18 years old and younger who were admitted with TBI. Data points collected included patient demographics; mechanism of injury; Glasgow Coma Scores; time to first seizure determined by electroencephalogram (EEG) or direct observation; neurosurgical interventions performed or hyperosmolar therapy initiated; and adverse medication events.

RESULTS: 198 patients were included for evaluation, with 137 patients in the (fos)phenytoin group and 61 patients in the levetiracetam group. The majority of patients were white males and depressed skull fracture was noted in 18.4% (21/114). In 95.5% (189/198) of patients, blunt trauma (mechanized or non-mechanized) was the primary mechanism of injury. Non-accidental trauma occurred in 3.5% (7/198) of patients. Neurosurgical intervention and/or hyperosmolar fluid treatment was utilized in 56.6% (112/198). Overall, 7.1% (14/198) of patients experienced early PTS. By treatment group, early PTS occurred in 8.8% (12/137) in the (fos)phenytoin group and 3.3% (2/61) in the levetiracetam group (p = 0.16). In patients with early PTS, seizure activity was confirmed by EEG in 41.7% (5/12) of patients receiving (fos)phenytoin and 50% (1/2) of patients receiving levetiracetam. The median time to first seizure was similar between groups. In the (fos)phenytoin group, there were three reported adverse medication events (papular rash, elevated aspartate transaminase levels, elevated total bilirubin levels) that led to discontinuation of the medication. There were no reported adverse medication events that led to discontinuation of levetiracetam.

CONCLUSIONS: In pediatric patients with TBI, there was no statistically significant difference in early PTS activity or adverse medication events between (fos)phenytoin and levetiracetam.

VI-18
PHARMACY-COMPounded DIARRHEA: EXAMINING THE EFFECTS OF ENTERAL NUTRITION AND SORBITOL-CONTAINING MEDICATIONS. Grace A. Martin, Samuel L. Aitken, Todd W. Canada. The University of Texas MD Anderson Cancer Center, Houston, TX.

BACKGROUND: Diarrhea is a common complication with multiple etiologies in hospitalized patients; however, one potential cause may be easily overlooked. Sorbitol is an excipient used to improve the palatability and stability of many commercial and compounded oral liquid medications, but it can induce osmotic diarrhea. We investigated whether sorbitol-containing medications administered to patients receiving enteral nutrition (EN) were associated with diarrhea unbeknownst to the clinician.

METHODS: Adult (age ≥ 18 years) patients admitted to our institution from January 1 through July 31, 2015 who received EN during their stay were included in this study. Clostridium difficile tests were used as a surrogate marker for diarrhea. Commercial and pharmacy-compounded oral/enteral liquid medications were reviewed for sorbitol content. For the inpatient encounter when EN was
administered, the number of sorbitol-containing medications (reported as median [interquartile range]) and the completion and results of C. difficile tests (reported as proportions) were assessed for each patient. The number of sorbitol-containing medications was compared between patients with and without C. difficile tests using the Wilcoxon Rank-Sum test.

RESULTS: A total of 49 patients who received EN were included in the study. The review of oral/enteral liquid medications available at the institution revealed that 111 commercial oral/enteral liquid medications were purchased, and 49 (44%) of those contained sorbitol. Out of the 80 pharmacy-compounded liquid oral/enteral formulations available, 51 formulations (64%) contained sorbitol. One or more sorbitol-containing medications were administered in 40 (82%) of the patients. 29 (59%) patients were tested for C. difficile with only two positive results (7%) upon the first test. The 27 patients with initial negative C. difficile results were tested for C. difficile a total of 60 times during the study period with only one additional positive result. Patients tested for C. difficile, excluding those with an initial positive result, received more sorbitol-containing medications (2 [1 – 3]) than those not tested (1 [1 – 2], p = 0.04).

CONCLUSION: Patients who received more sorbitol-containing medications were more likely to experience diarrhea and be tested for C. difficile by unsuspecting clinicians. Limiting sorbitol for patients receiving EN may reduce their risk of diarrhea. Pharmacists should assess the medication list for pharmacologic causes of diarrhea, including sorbitol-containing medications, for patients receiving medications through a feeding tube and recommend alternative formulations when appropriate. This simple intervention could prevent unnecessary C. difficile workups and reduce complications associated with diarrhea.

VII-1
MEDICATION USE EVALUATION AND COST MINIMIZATION ANALYSIS OF PREMIXED NICARDIPINE INJECTABLE SOLUTION VERSUS COMPOUNDED NICARDIPINE INJECTION IN A COMMUNITY HOSPITAL. Christopher Brown, Kimberly Whitley, Lisa Mayer, Norman Regional Health System, Norman, Oklahoma.

BACKGROUND: Injectable nicardipine, a dihydropyridine calcium channel blocker, is most often used to treat acute hypertension. Presently, premixed nicardipine injectable solution is primarily used at Norman Regional Health System (NRHS). Converting to a pharmacy compounded formulation has been identified as a potential cost savings opportunity.

PURPOSE: The primary objective of this study is to determine the strategy that will provide the most cost savings potential of pharmacy prepared nicardipine injection, while taking into consideration the workload implications to pharmacy staff.

METHODS: This study, which was considered exempt by the NRHS Institutional Review Board, consisted of an observational, retrospective, electronic medical record review of nicardipine injection utilization, followed by a cost analysis of nicardipine injection dosage forms. The following data was recorded for each eligible patient: number of doses of premixed nicardipine injectable

solution administered, nursing unit on which the medication was administered, indication, and frequency of doses administered. A cost minimization analysis was conducted and subsequent conversion to the most cost effective and pharmacy workload responsible process identified.

RESULTS: 202 charts were identified and reviewed. A total of 408 doses of nicardipine injection were given, 328 premixed bags and 80 compounded by the pharmacy. Current protocol costs the pharmacy an estimated $54,724 annually. Utilization of a nicardipine kit and pharmacy compounding subsequent doses cost savings potential of $41,512 annually. Utilization of a nicardipine kit alone cost saving potential of $40,353 annually.

CONCLUSION: Utilization of a nicardipine kit alone was determined to be the most cost effective and pharmacy workload responsible process.

VII-2
ANALYSIS OF USE OF PROCALCITONIN ASSAY IN COPD EXACERBATIONS AT AN ACADEMIC MEDICAL CENTER. Philip Dollin, Tiffany LaDow, Charlotte Farris, Scott & White Memorial Hospital, Temple, TX.

PURPOSE: To examine frequency of discontinuation or non-initiation of antibiotics in patients hospitalized with acute exacerbations of chronic obstructive pulmonary disease (AECOPD) following measurement of a procalcitonin level within 48 hours of admission.

METHODS: This study is being conducted via retrospective analysis of the electronic medical records of patients of Scott & White Memorial Hospital. A convenience sample of 120 patients admitted to the hospital for AECOPD in whom procalcitonin level was measured within 48 hours of admission will be analyzed. The patients will be grouped by serum procalcitonin value based on published algorithms for use of procalcitonin assay in lower respiratory tract infection (LRTI), which strongly discourage antibiotic use in patients with procalcitonin levels of 0.1 ng/mL or less. The primary endpoint will be frequency of non-initiation of antibiotics or discontinuation of antibiotics within 24 hours of procalcitonin results.

RESULTS: Preliminary analysis revealed that 76.7% (33/43) of patients with an initial procalcitonin value of 0.1 ng/mL or less had active orders for antibiotics 24 hours after reporting of the initial procalcitonin value. All patients (11/11) with initial procalcitonin level greater than 0.1 ng/mL but less than or equal to 0.5 ng/mL had active orders for antibiotics 24 hours after reporting of the initial procalcitonin value. All patients (2/2) with initial procalcitonin level greater than 0.5 ng/mL had active orders for antibiotics 24 hours after reporting of initial procalcitonin value. Data collection is ongoing.

CONCLUSIONS: Decisions about non-initiation or discontinuation of antibiotic therapy in AECOPD patients at Scott & White Memorial Hospital may not align with published algorithms for procalcitonin use in AECOPD/LRTI.
VII-3
EVALUATION OF AUTOMATED MEDICATION DISPENSING MACHINE OVERRIDEs AND DEVELOPMENT OF POLICIES TO PROMOTE IMPROVEMENT. Whitney A. Rohlman, Jerri B. Cody, Darin L. Smith, Norman Regional Health System, Norman, OK.

PURPOSE: Automated dispensing machines (ADMs) are often used in health systems to allow nurses convenient access to medications. Users are able to retrieve medications prior to pharmacist review via override, which increases the risk of medication error and patient harm. Joint Commission Standard MM.5.01.01 requires that “a pharmacist reviews the appropriateness of all medication orders for medications to be dispensed in the hospital.” Exceptions are permitted when treatment delays would harm the patient. Compliance with this standard should be evaluated periodically. The primary objective of this study was to evaluate appropriateness of medications removed from ADMs via override.

METHODS: Retrospective ADM reports were used to identify medications removed via the override function. Chart review was then performed to determine if the override was appropriate. The initial retrospective review looked at overrides that occurred from May 15th to May 31st, 2015. An ongoing quality assurance program will be implemented March 1st, 2016, with a subsequent data analysis to assess the impact of interventions.

RESULTS: An interim analysis of 214 overrides was performed. A majority of the medication overrides (n=155) occurred in the ICU. Of medications withdrawn from ADMs via override and administered, 54% were inappropriate; the most common inappropriate reason for override was no order.

CONCLUSION: Based on the interim data, a quality assurance program was implemented to monitor controlled substances removed from the ADMs via override.

VII-4
IMPACT OF A UNIT-BASED PHARMACY TECHNICIAN AT A TERTIARY ACADEMIC MEDICAL CENTER. Amanda Beck, Anthony Colavecchia, David Curlee, Houston Methodist Hospital, Houston, TX.

PURPOSE: To quantify the impact of a unit-based technician (UBT) on general medicine and intermediate care units.

METHODS: A quasi-experimental study was conducted on general medicine units for fourteen weeks from September 28th, 2015 to February 12th including a one week wash out period. Study units were selected based on percent of missing doses, patient population, and types of medication frequently dispensed. A nursing satisfaction survey was administered to all full-time day nurses on the study units one week before and during week five and twelve of the study period. The UBT’s daily tasks were recorded on a standardized task list.

RESULTS: The rates of missing dose requests per week during the study period were consistent with the lowest rate being 25 per week and the highest rate being 45 per week. Nursing satisfaction survey results revealed an increase in nursing satisfaction after implementation of the unit based technician. There was a statistically significant improvement in the perceived time locating missing medications. When performing medication reconciliation the UBT prevented 8 products per week from being made, and reused an average of 15 products per week. Total direct medication cost avoided between prevented and reused products was $4,440.93. The direct medication cost total does not account for the indirect cost of labor avoided. The UBT also completed 3.2 medication histories per week and found 3.7 medications per week in the incorrect bin on the study units.

CONCLUSION: Analysis of nursing satisfaction survey results demonstrates that nurses were satisfied with the time spent locating missing medications after implementation of the UBT. The nursing department is more satisfied with pharmacy services when UBT services are provided.

VII-5
DECREASING THE RATE OF INAPPROPRIATE PROTON PUMP INHIBITOR USE IN THE EMERGENCY CENTER. Henry Cao, Tami Johnson, Chun Feng, Patrick Chaftari, UT MD Anderson Cancer Center, Houston, TX.

Purpose: The use of proton pump inhibitors (PPIs) have been high in many healthcare settings nationwide. The prolonged use of these medications are associated with potentially significant adverse drug effects. This study aims to reduce the amount of inappropriate PPIs ordered within our institution’s emergency center (EC).

Methods: This study was performed as a quality improvement project. Census data and quantity of PPIs dispensed from the emergency center from October 2014 to April 2015 were retrieved. A randomized retrospective chart review of patients who presented to the EC was performed to assess the appropriateness of PPI use based on both FDA approved indications as well as indications supported by primary literature sources. Additionally, EC physicians were surveyed in order to establish baseline prescribing characteristics to determine the most common rationale for ordering PPIs. An education plan was formulated as a part of the study intervention to inform providers of the proper indications.

Results: The number of single dose IV pantoprazole ordered prior to the intervention period was 2,983 over the seven months. Based on a randomized retrospective chart review of 150 unique patients who received single doses of IV pantoprazole, ninety-nine patients (66%) did not have valid indications for PPIs. Thirty-one of the ninety-nine patients (31.3%) were admitted with pantoprazole as a part of their inpatient medications. We also identified six patients (4%) with major drug interactions. A total of twenty emergency center physicians were surveyed of their baseline prescribing characteristics. The most common rationale for PPI use among EC physicians was for corticosteroids (45%) and stress ulcer prophylaxis (15%).

Conclusions: A significant proportion of patients who presented to the emergency center received doses of pantoprazole without valid indications. Educating providers regarding the proper indications of proton pump inhibitors may contribute to a decrease in the rates of inappropriate use. Further studies will be required to decrease inappropriate usage beyond the emergency center.
IMPACT OF A PHARMACIST DIRECTED RISK ASSESSMENT DISCHARGE TOOL (RADT) ON HOSPITAL READMISSIONS. Kendra Gonzalez, Karlye Pesci, Laura Sample, CHRISTUS Spohn Hospital Corpus Christi – Memorial, Corpus Christi, TX.

INTRODUCTION: Studies have shown more than 40% of medication errors occur during medication reconciliation processes, in which 20% are believed to result in harm potentially leading to readmissions.2 Many of these errors occur during transitions of care and discharge. To address this concern the hospital developed targeted criteria to identify inpatients with high-risk admission diagnoses, co-morbidities and/or discharge medications as a group for pharmacists to provide additional intervention prior to discharge. The purpose of this study is to evaluate the impact of a pharmacist directed RADT and assess if it is appropriately identifying the highest risk patient population to decrease 30-day readmission rates.

METHODS: This study is a retrospective chart review. All patients greater than 18 years of age admitted and discharged between July 2015 and June 2016 will be eligible for inclusion. Admissions of all causes except for a primary diagnosis of a psychiatric related condition will be included. Each patient readmitted within 30 days will be grouped into either pharmacist intervention or no pharmacist intervention and then further categorized by risk level. A “readmission” will be defined as an unplanned all-cause 30-day readmission after an admission for any condition. If a patient is readmitted within 30 days of an admission the study will record the following information for readmitted patients: length of stay, discharge disposition, discharging unit, primary payer, diagnosis related group and description, admission date, discharge date, readmission date, readmission diagnosis related group, risk assessment based on the RADT, and pharmacist intervention. This data will be analyzed to determine if the number of 30 day readmissions is greatest in the RADT identified high risk groups versus the medium risk and low risk groups. Additionally, the study identified top readmission diagnosis related groups will be compared to those classified as high risk on the RADT tool. This data will be used to determine if the RADT is accurately targeting the highest risk patient populations most frequently readmitted to the hospital within 30 days.

RESULTS: Preliminary data to be presented.

CONCLUSION: Pending.

THE IMPLEMENTATION OF DISCHARGE FOLLOW-UP PHONE CALLS AT A COMPREHENSIVE CANCER CENTER. Shrina Patel, Phuoc A. Nguyen, Melissa Bachler, Bradley Atkinson. The University of Texas MD Anderson Cancer Center (MD Anderson), Houston, TX.

BACKGROUND: The Joint Commission has identified medication reconciliation as a National Patient Safety Goal to reduce patient harm. Recurrent hospitalizations are responsible for substantial health care costs and are often due to adverse drug events. Prior studies have shown that many of these readmissions are avoidable through effective discharge planning and patient follow-up after a hospitalization. However, there is limited information on how to effectuate such a process.

PURPOSE: Develop and implement a pharmacy-driven post discharge telephone call program to assess for medication adherence, provide education, and address medication-related concerns.

METHODS: Learning objectives were established via Bloom’s Taxonomy. To develop the training components, various tools and resources were utilized such as REDCap, Snagit, motivational interviewing, and teach back methods. The training included a pre-test, self-learning via best practice manuscripts from primary literature and consensus guidelines, instructional videos, a post-test, and simulation practice. Patients discharged from the general internal medicine inpatient service beginning mid-October 2015 received a call within 72 hours of being discharged. Secondary objectives include patient related outcomes.

RESULTS: As of February 2016, 23 trainees (pharmacy students, clinical pharmacy specialists, and outpatient pharmacists) have been trained. The mean pre- and post-test score was 6.3 and 8.8, respectively out of a total score of 10. Thus far, 211 calls have been completed; 175 patients (83%) were successfully reached, and 20 patients (9%) declined the phone call. The average phone call is 14 minutes. Additional clarification by a healthcare provider was required for 26 patients (15%). Regarding medication adherence, 134 patients (89%) received their new medications within 72 hours, and 87 patients (58%) were identified as having one or more discrepancies. The most common discrepancies were drug not mentioned (25%) and incorrect frequency (19%). Of 169 patients evaluated at 30 day post discharge, 32 patients (19%) were readmitted and 42 patients (25%) returned to the emergency room.

CONCLUSION: The post discharge telephone process is a component of the transitions of care (TOC) pilot program at MD Anderson. TOC activities provided to patients include a medication history at admission, patient education and counseling throughout the stay and at discharge, and a post discharge telephone call within 72 hours and at 30 days. A pharmacy-driven transitions of care program can successfully be implemented and positively impact patient outcomes.

INFLUENZA-LIKE ILLNESS IN HIV-INFECTED ACTIVE DUTY MEMBERS RECEIVING LIVE ATTENUATED VERSUS INACTIVATED INFLUENZA VACCINE. Julie L. Menegay, Jason F. Okulicz, San Antonio Military Medical Center, Fort Sam Houston, TX.

PURPOSE: To evaluate influenza vaccine administration practices and the incidence of influenza-like illness (ILI) following vaccination in HIV-infected individuals. The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) guidelines recommend inactivated influenza vaccine (IVI) for all HIV-infected individuals, however data is limited on adverse effects of inactivated influenza vaccine (IVI) vs live attenuated intranasal influenza vaccine (LAIV) in HIV-infected persons.

was performed. Influenza vaccination history, including receipt of LAIV or IIV after HIV diagnosis, and CD4 count and viral load at time of vaccination were evaluated. The proportion of patients with ILI diagnoses within 30 days after vaccination with either IIV or LAIV was assessed by ICD-9 codes.

RESULTS: A total of 592 patients were included; 269 (45.4%) received LAIV after HIV diagnosis. Of these, 167 (62%) patients received LAIV during ≥ 2 doses in separate influenza seasons. The mean CD4 count at time of first LAIV vaccination was 555 ± 240 cells/μL. Data evaluating ILI diagnoses after LAIV or IIV vaccination is currently pending.

CONCLUSION: In contrast to CDC recommendations, nearly half of all USAF patients with HIV infection received LAIV at least once after HIV diagnosis. Although LAIV administration may or may not show an increased frequency of ILI following vaccination, further education is needed to ensure that LAIV is avoided in USAF members with HIV infection.

VII-9 EVALUATION OF THE IMPACT OF A NATIONAL OPIOID SAFETY INITIATIVE ON CENTRAL TEXAS VETERANS ON CONCURRENT OPIOIDS AND BENZODIAZEPINES WHO COMPLETED SUICIDE. Sarah Klembith, Katerine Getchell, Central Texas Veterans Health Care System, Temple, TX.

PURPOSE: Concurrent use of opioids and benzodiazepines has been associated with an increased risk of adverse effects, such as fatal/nonfatal overdose, more aberrant behaviors, and death. A national Opioid Safety Initiative (OSI) was implemented at the Veterans Health Administration (VHA) in April 2014 with one goal being to decrease concurrent use of opioids and benzodiazepines. The objective of this study is to evaluate the impact the OSI has had on Central Texas Veterans Health Care System (CTVHC) patients taking concurrent opioids and benzodiazepines who completed suicide.

METHODS: This quality improvement project has been granted exemption status from the Institutional Review Board. Patients who completed suicide between September 15, 2013 and September 15, 2015 will be identified from a preexisting database of completed suicides among CTVHC veterans. A retrospective computerized patient record system (CPRS) chart review will be performed on all patients to identify those who had active prescriptions for both an opioid and benzodiazepine at the time of completed suicide. The percentage of patients who completed suicide and were on concurrent opioids and benzodiazepines one year before and one year after the initial OSI goal date of September 15, 2014 will be analyzed. Descriptive statistics will be used to display the data.

RESULTS & CONCLUSION: This study is currently in data collection phase. The results and conclusions will be available when the study is completed.
process-technology. With the involvement of the ED department, pharmacy staff, and IT support team, focused interventions are being implemented based on the identified framework. Post implementation data will be collected to see improvements towards successful scanning rates in the emergency department.

RESULTS: Final results are pending. From the Pareto analysis, the top ten medications that were associated with the most alerts were identified. After analysis of the alerts, the people-process-technology model was applied to categorize the respective medications. Nearly 25% of the alerts were related to the people component of the BCMA process where alert fatigue, anticipation of medication not scanning and other scenarios played a role. About 50% of the alerts were related to the medication use process, such as ordering or dispensing from the automated dispensing cabinets. About 25% of the alerts were related to technology and associated tools, such as formulary and order set build, computer setup for scanning, and others. Various interventions are currently being implemented to improve appropriate utilization of BCMA technology in the emergency department and thereby increase successful scanning rates.

CONCLUSION: Pending final results.

VII-12 SEVERE SEPSIS OR SEPTIC SHOCK UPON ARRIVAL TO THE EMERGENCY DEPARTMENT (ED) – ARE ED PHARMACISTS IMPROVING OUTCOMES? Angela Gammell, Michelle House, Jared Gower, Theresa Yarger Baylor Scott & White All Saints Medical Center – Fort Worth, Fort Worth, TX.

PURPOSE: To determine compliance with 3-hour and 6-hour guideline-based bundles and assess if specific therapeutic targets are improved when an ED pharmacist is assisting in a multidisciplinary sepsis care team. Severe sepsis and septic shock continue to be associated with high mortality and high economic burden. Surviving Sepsis Campaign Bundles have been shown to decrease mortality, especially via expedited antibiotic therapy. When present, the ED pharmacist can assist with antibiotic selection, acquisition, dosing, and preparation, thus potentially decreasing time to administration. Their presence may facilitate improved compliance with guideline-based ED sepsis bundles and thus lead to better patient outcomes.

METHODS: This study is designed as a retrospective chart review and was submitted to the Institutional Review Board for approval before beginning data collection. The electronic health record system identified adult patients who presented to the ED from January 2014 to June 2015, with the admitting diagnosis of severe sepsis or septic shock. This study will compare the data of patients who presented to the ED at times when an ED pharmacist was assisting to that of patients who arrived at times when an ED pharmacist was not present. The following data is being collected: time severe sepsis/septic shock was identified, time to antibiotic administration, time to obtain initial lactate, time blood cultures were collected, time to IV fluid administration, time to achieve mean arterial pressure (MAP) ≥ 65mmHg, and time to vasopressor administration (for persistent hypotension). These variables are being evaluated for compliance with the 3-hour and 6-hour guideline-based sepsis bundles. Baseline patient characteristics include age, use of immunosuppressive agents, history of comorbidities, and identified or suspected source of infection. The following variables are also being collected for correlation with progression of disease: time to ICU transport, hospital length of stay, and in-hospital mortality.

RESULTS: Pending; data collection and analysis ongoing.

VII-13 MEDICATION RECONCILIATION IN THE EMERGENCY DEPARTMENT PERFORMED BY PHARMACY PERSONNEL: A PROSPECTIVE COHORT COMPARISON STUDY. Bella Mogaka, Darren Clary, Annie Hong, Baylor Scott & White Health, Temple, TX.

PURPOSE: Admission to an emergency department (ED) is a key vulnerable moment when patients are at risk of medication discrepancies. Medication histories are an effective way of ensuring that fewer errors are made. The objective of this study is to determine the role of pharmacy personnel in obtaining best possible medication histories and performing reconciliation at the admission interface of care from the ED to the inpatient setting therefore maximizing transitions of care opportunities.

METHODS: This prospective cohort comparison study received approval from the Institutional Review Board. The intervention group consists of pharmacy personnel conducting a best possible medication history interview on patients 18 years or older admitted through the Scott & White Memorial Hospital emergency department (ED) to general medicine floors from February 15th to March 13th, 2016. The control group consists of retrospective chart review between November 23rd and December 20th, 2015 where ED providers (physicians, physician assistants, nurse practitioners, nurses, and medical students) conducted medication histories and reconciliations. A best possible medication history is a medication history obtained by a provider which includes a thorough history of all regular medication use (prescribed and non-prescribed), using a number of different sources of information. Both groups will then receive a second standardized medication history by trained pharmacy personnel and all discrepancies shall be recorded. The primary outcome of this study is to compare the number of discrepancies identified in each group.

RESULTS: The preliminary results will be presented. Data collection is on-going.

CONCLUSION: Medication histories and reconciliations performed in the emergency department by pharmacy personnel lead to fewer discrepancies during admission.

VII-14 IMPACT OF PHARMACIST INTERVENTIONS ON READMISSION RATES FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD). Andrea M. Raji, Armando Burchett-Zuniga, Kristin Montarella, Laura Randolph, Nancy Waugh, Integris Southwest Medical Center/Southwestern Oklahoma State University College of Pharmacy, Oklahoma City, Oklahoma.

PURPOSE: Hospital admissions for acute exacerbations of chronic obstructive pulmonary disease (COPD) are the fourth costliest potentially preventable type of
readmission. Proper inhaler technique has been identified as a common pitfall in patient compliance to their inhaled medications for COPD. This study revolves around developing and implementing a transition of care model that addresses a COPD patient’s understanding of how to use their inhalers in order to reduce readmission rates for acute exacerbations of COPD.

**METHODS:** This is a prospective, single center pilot study being carried out between December 2015 and March 2016. Patients are counseled on proper inhaler technique during December, January, and February. Thirty-day readmission data are being collected from December to March. Patients are included if they are admitted to Integris Southwest Medical Center with COPD education orders on their electronic health record (EHR) and are using at least one inhaler at home. Additional exclusion criteria is also applied. All eligible patients are randomized in a 1:1 ratio. The control group only receives COPD education and counseling by a respiratory therapist, while the intervention group receives additional COPD education and counseling by a pharmacist prior to discharge from the hospital. Pharmacist counseling sessions include inhaler demonstration videos, live demo inhaler demonstrations by the pharmacist, and written instructions on how to use the inhaler device. Patients also receive medication guides, general educational materials on COPD, and co-pay cards (if eligible). Patient satisfaction surveys are being utilized to evaluate clarity of instruction and effectiveness of the counseling session.

**RESULTS:** In progress.

**CONCLUSION:** In progress.

**VII-15**

**EVALUATION OF ASTHMA READMISSION RATES AS COMPARED TO THE JOINT COMMISSION STANDARD.** Lauren A. Coker, Kelsey Trimble, Amanda L. Storer. University Health Shreveport, Shreveport, LA.

**Purpose:** According to the NIH Statistics, 6.8 million children suffered with asthma in the year 2012 while more than 10 million children in total have been diagnosed. Multiple interventions to reduce readmissions have been evaluated including school based asthma programs, peer led asthma education, parental asthma coaching and emergency department education. This quality improvement study will assess the pediatric asthmatic readmission rate at our institution for comparison to the standards set forth by The Joint Commission. Assessment of the readmission rate will allow the institution to further investigate the utility of pediatric inpatient asthma education prior to discharge.

**Methods:** This retrospective study is IRB approved. A report within our institution’s electronic medical record system will be created to include pediatric inpatients, ages 2-17, with an asthma related diagnosis related group (DRG). The data collected will include: medical record number (MRN), age, asthma counseling received as an inpatient, admission date, number of readmissions or emergency department visits at 30 days, 3 months, 6 months, and 1 year after primary admission, medication use prior to admission, presence of infection, admission to the pediatric ICU (PICU), intubation due to asthma related reasons, if asthma medication therapy was changed on discharge, and if the patient was received as a transfer from an outside hospital. The information will be gathered from the patients chart including physician notes, pharmacist counseling documentation notes and medication history. All data will be kept electronically and confidentiality will be maintained. The rates of readmission in the previously mentioned time frames will be evaluated against the standard set forth by The Joint Commission. We will also compare the rates of readmission and emergency department visits between patients that received asthma education as an inpatient versus patients that did not receive education prior to discharge.

**Results:** In process

**Conclusions:** To be determined

**VII-16**

**ENHANCING PRACTICE THROUGH THE USE OF A CLINICAL SKILLS ASSESSMENT PROGRAM.** Wendy Nguyen, Stephanie Zepeda, Janet Gonzalez, Melanie Roberts, Michelle Munch, Amy Jo Harzke, University of Texas Medical Branch, Correctional Managed Care, Huntsville, Texas.

**Purpose:** It is important to ensure that clinical pharmacists have the necessary knowledge and skills to meet the growing expectation of current practices and demands for quality care that is safe and cost effective. One approach is to conduct periodic assessments of the clinical pharmacists’ skills in order to more objectively evaluate their critical thinking and problem solving skills.

**Methods:** The program is comprised of two assessments, Disease Therapy Management (DTM) Services in clinics and Response to Non-Formulary (NF) requests. We identified primary competencies based on these two major job responsibilities. Eleven criteria and a simple rating scale of 0-2 (0 = Does not meet competency, 1 = Needs improvement, and 2 = Meets competency) were selected. Clinical pharmacists had to achieve an overall score of two to pass the skills assessments. A retrospective review of NF requests was used to assess NF responses. Direct observation was chosen as the methodology for evaluation of DTM services, since it is a method of observing real-world practice. During observations, the rater’s participation was limited to observation and feedback was held until after the assessment.

**Results:** NF requests were evaluated for eight pharmacists. The overall score in this assessment was 1.98. Seven pharmacists received an overall score of two. One clinical pharmacist had an overall score of 1.8 and had an area of deficiency identified. DTM services were evaluated for six pharmacists. The overall score was 1.64 (1.17-1.83). At least one area of deficiency was identified for each pharmacist. Four pharmacists shared a common skill that they need to improve on. These scores were included in the pharmacists’ annual performance evaluation, but were not used to calculate their overall performance rating. A developmental plan was developed specifically for each individual.

**Conclusion:** There is currently no standard set for developing a competency assessment program. The clinical skills assessments were effective in evaluating the abilities of each clinical pharmacist in core areas of responsibility. The assessments also helped us tailor improvement plans and establish expectations for performance for subsequent years.
VII-17
A DESCRIPTIVE REVIEW OF PEDIATRIC DISCHARGE PRESCRIPTION INTERVENTIONS MADE BY EMERGENCY DEPARTMENT PHARMACISTS DURING A PROSPECTIVE REVIEW PROCESS. Erin N Waehner, Debra Castaneda, Stephanie Weightman, Rustin Morse. Children's Medical Center Dallas, Dallas, TX.

Purpose: To describe the discharge prescription interventions made by ED pharmacists at Children's Medical Center Dallas ED using a pharmacist verification process.

Methods: This is a retrospective, single-center; electronic chart review of discharge prescription interventions made December 7 2015 through February 1, 2016. Patients were identified through an electronic database. The following patient clinical and demographic information will be collected: age, weight, date of prescription, location (Dallas main ED, Dallas fast track), time of original order, time of re-order, medication name, medication strength, medication formulation, medication directions, prescriber, and emergency severity index (ESI). Interventions will be reviewed by one pharmacist and assigned a severity score utilizing The National Coordinating Council for Medication Error Reporting and Prevention Index (NCC-MERP) and Taylor et al, 2005 methodology. The primary outcome is to assess the total error rate of the discharge prescriptions. Secondary outcomes will assess error rates dependent on provider type, patient age groups, ESI levels and severity of the errors. Descriptive statistics will be performed to analyze the data.

Results: Pending

Conclusion: Pending

VII-18
IMPLEMENTATION AND EVALUATION OF TARGETED STRATEGIES FOR REDUCING MISSING DOSE REQUESTS IN AN ACADEMIC VETERANS AFFAIRS MEDICAL CENTER. Ashley L. Adams, Avani Desai, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

Purpose: System redesign promotes a culture of continuous improvement in learning to achieve VHA’s mission of providing exceptional healthcare that improves the health and well-being of our nation’s Veterans. This project is designed to be used internally within the Michael E. DeBakey VA Medical Center to reduce the number of missing doses entered daily. The primary objective of this study is to assess the effect of targeted strategies on the number of missing dose requests submitted within three internal medicine units at an academic VA Medical Center to decrease inefficiencies in patient’s being unable to receive their medications on time.

Methods: A quality improvement study will be completed, as part of LEAN Yellow Belt certification, to decrease the number of missing doses required by assessing the effectiveness of the strategies to improve timely medication delivery on three medicine units. All strategies will be the same for each of the units. Data from June, 1 2015-August 31, 2015 will be collected as baseline data for pre-implementation. The strategies will be implemented on September 1, 2015 and December 1, 2015. Intervention #1 was to standardize the Omnicell inventory on the three internal medicine units. Intervention #2 was to place a missing dose bin in each unit’s medication room to standardize where missing doses are placed once they are dispensed to the floors. Data from December 1, 2015 to February 29, 2016 will be collected for post-implementation analysis. All data will be collected using an SQL VA pharmacy database query and VISTA missing dose medication reports during the specified timeframes, which are routinely used in monitoring pharmacy activities and evaluating pharmacy costs. Information gathered will be compared to the aggregate number of medications dispensed. This project activity is not designed to produce information that expands the knowledge base of a scientific discipline, but rather it is designed to fulfill an operations need within the pharmacy department at the Michael E. DeBakey VA Medical Center.

Results: The results are still pending at the time of this submission.

Conclusions: The conclusions are still pending at the time of this submission.

VII-19
EFFECT OF PHARMACIST-PROVIDED CLINICAL INTERVENTIONS ON QUALITY OF CARE AND COST AVOIDANCE IN AN EMERGENCY DEPARTMENT. Mahmoud M. Sabawi, Gregory Laine, Kimberly Putney, Lucretia C. Davis, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: Emergency Department (ED) pharmacists have skill in triaging the needs of emergent patients as well those who are boarding. The most recent evidence detailing ED pharmacists’ effect on cost-avoidance at CHI Baylor St. Luke’s Medical Center (BSLMC) dates back to 2011. The purpose of this study was to examine the impact of ED pharmacists on the quality of care provided to patients and to measure impact on cost avoidance through pharmacist-documented interventions.

METHODS: This was a single center, retrospective, observational, chart review performed on ED pharmacist interventions made in the BSLMC ED from June 1, 2014 to May 31, 2015 Interventions not sufficiently documented and interventions documented on patients less than 18 years of age were excluded. The cost avoidance assigned to the various pharmacist interventions was determined internally based on a survey of literature. Cost determinations were based on several studies that evaluated the cost avoidance associated with various intervention categories. The total cost avoidance, the most common intervention category, and the proportion of ED patients intervened upon were determined.

RESULTS: A total of 2,335 documented interventions made on 2,018 patients were collected. A total of 32,016 patients visited the ED over this time period. Intervention types included medication selection and dose optimization, antimicrobial stewardship, code blue participation, discharge counseling, medication history/reconciliation, nurse or physician consultation, documentation of drug interactions, participation in rapid sequence intubation (RSI), sepsis management, and stroke management. The total cost avoidance associated with ED pharmacist interventions was $1,493,054. The most common intervention categories were antimicrobial stewardship; medication selection and dose optimization; or a physician-pharmacist consultation.
**CONCLUSION:** Based on the data analyzed, pharmacists contribute over $1.4 million to cost avoidance in the ED. Pharmacists play an active role in choosing the most appropriate medications and doses for emergent and boarding patients. In addition, they lead an antimicrobial stewardship program for patients discharged from the ED. Pharmacists remain an essential part of the ED team.

**VIII-1**
**EVALUATION OF OUTCOMES BY CLINICAL PHARMACY SPECIALISTS COMPARED TO A NEPHROLOGY SPECIALTY SERVICE IN PATIENTS WITH DIFFICULT TO MANAGE HYPERTENSION.** Catlin Grisham-Takacs, Crystal Brown, Adebola Adesoye, Rick Weideman, North Texas VA Health Care System, Dallas, TX.

Background: Patients with difficult to manage hypertension are not only at an increased risk for developing cardiovascular disease, but also potentially for poor management of other disease states, including chronic kidney disease. Data has shown that frequent provider follow-up and aggressive management of antihypertensive therapy reduces risk of cardiovascular events. Clinical pharmacy specialists have the potential to provide effective management of this disease state, thus taking the clinical burden off of other specialty areas.

Objective: To evaluate clinical outcomes of patients with difficult to treat hypertension managed by clinical pharmacy specialists as compared to those managed by a nephrology specialty clinic. We hypothesize that clinical outcomes of patients in the clinical pharmacy specialist study arm will be non-inferior to clinical outcomes of patients in the nephrology specialty clinic study arm.

Methods: This is a retrospective cohort study which investigates patients with hypertension at the VA North Texas Health Care System who are on 4 or more antihypertensive medications, remain uncontrolled and were referred to a clinical pharmacy specialist or nephrology specialty clinic between December 2011 and October 2014. Patients will be followed from the visit that they are referred to the specialty clinic and hypertension is addressed, to goal and for 18 months after goal has been achieved or end of study period. The primary outcome is the percentage to attain blood pressure goal less than 140/90 mmHg within 6 months of the initial visit. Secondary outcomes include: time to achieve goals, length of time goal is maintained, number and type of antihypertensives required to achieve goal, composite of cardiovascular related hospitalizations, hypertension related ER visits and prevalence of adverse drug reactions. Data to be collected includes patient demographics (age, gender, race, BMI), number of antihypertensive medications at inclusion and at goal, comorbidities (CAD, DM, CKD, stroke, mental health), blood pressure averages at each visit, renal function, report of side effects, treatment compliance and occurrence of cardiovascular related hospitalizations or ER visits.

Statistical Analysis: Nominal data will be analyzed using a chi squared or Fisher’s exact test and continuous data will be analyzed using a student t test as appropriate. Logistic regression and propensity matching will be performed to match subjects from each group. All measures will be examined by 2 sided tests with p values less than 0.05 considered statistically significant.

Results: Pending completion of data collection
Conclusions: Pending results

**VIII-2**
**EVALUATION OF A NEW CARDIOTHORACIC SURGERY INSULIN INFUSION PROTOCOL FOR POST-OPERATIVE BLOOD GLUCOSE MANAGEMENT.** Mythili Chunduru, Katherine Jennings, Kristina Dupré, Lori M. Lemoine, Patrick Parrino, Michael Townsend, Ochsner Medical Center, New Orleans, LA.

**PURPOSE:** To compare the frequency of hypoglycemia (<70mg/dl) after the implementation of a moderate blood glucose control protocol (110-140 mg/dl) to a previous strict protocol (80-110 mg/dl) in post-operative cardiothoracic surgery (CTS) patients at Ochsner Medical Center.

**METHODS:** This was a retrospective cohort study including patients greater than 18 years of age who had undergone elective cardiothoracic surgery (CABG and/or valve procedures) at Ochsner Medical Center between May-September of 2014 (n=60) and May-September 2015 (n=60). Patients who were not initiated on an insulin infusion in the postoperative period were excluded. The primary outcome was the incidence of postoperative hypoglycemia within 72 hours. Secondary outcomes included the incidence of one hypoglycemic event, incidence of more than one hypoglycemic event, incidence of severe hypoglycemic event (<40 mg/dl), incidence of hyperglycemia (≥200 mg/dl), and mean ICU length of stay. Clinical outcomes included new stroke, new onset atrial fibrillation, pneumonia within 30 days, acute kidney injury (AKI) or need for renal replacement therapy, new stroke, sternal wound infection within 30 days, and in-hospital mortality.

**RESULTS:** Postoperative hypoglycemia within 72 hours occurred in 28.3% and 15% of the strict and moderate strategy groups respectively. Of these incidences, 88% and 55.6% were singular events and 11.8% and 44.4% were numerically higher in any other secondary outcomes. Moreover, severe hypoglycemia occurred in 3.3% on 0% in the strict and moderate strategies. There was no significant difference in the incidence of hyperglycemia between the groups. There were no differences in any other secondary outcomes.

**CONCLUSIONS:** The results demonstrate that there was numerically less postoperative hypoglycemia and severe hypoglycemia with the moderate blood glucose control protocol compared to the strict protocol without an increase in complications.

**VIII-3**
**IMPACT OF ACTIVE HEART FAILURE MANAGEMENT IN THE VETERANS AFFAIRS COMMUNITY LIVING CENTER POPULATION** Ruby Oh, Kalin Clifford, Nakia Duncan, Kevin C. Kelly; Veteran’s Affairs North Texas Health Care System and Texas Tech University School of Pharmacy, Dallas, Texas.

**BACKGROUND:** Heart failure (HF) is the leading cause of hospital admissions for patients greater than 65 years of age. HF can be divided into two groups, HF with reduced ejection fraction (HFrEF) or HF with preserved ejection fraction (HfPEF). Currently, there are only efficacious
therapies available for patients with HFrEF. The current ACCF/AHA HF guidelines have established recommended pharmacologic agents and target doses that have proven beneficial in mortality and/or morbidity outcomes in HFrEF. Recommended medications and doses were not determined by their therapeutic response, but titrated, as tolerated, until established target doses were met. The major clinical trials established that higher doses rather than lower doses demonstrated superiority, and were correlated with a lower risk of mortality and/or reduction of hospitalization. Patients hospitalized for HF are at an increased risk for all-cause re-hospitalization; with a 30 day readmission rate of approximately 25%. Many studies suggest that patients are frequently treated with lower doses than those shown to be effective in major clinical trials. The IMPROVE HF study established that in clinical practice a significant portion of HF patients, in who target doses of HF medications might be well tolerated, are not receiving target doses of these medications. As a result, these patients may be having clinical events that could have been prevented if interventions had been made to titration HF medication doses. Veterans Affairs CLC heart failure patients actively managed by healthcare professionals will have a reduced rate of cardiovascular hospitalizations, compared to patients who are not actively managed for their heart failure in the CLC.

PURPOSE: To determine the change in cardiovascular hospitalization within the Veteran Affairs North Texas Healthcare System (VANTHCS) in actively managed HFrEF patients admitted to the Veterans Affairs CLC

METHODS: This is a single center retrospective cohort chart review of patients residing at the Dallas VANTHCS Community Living Center (CLC) diagnosed with HFrEF. Patient greater than or equal to 65 years of age at the time of admission between September 1, 2010 and September 1, 2015 were included in this study. The inclusion criteria also included an ejection fraction ≤ 40% and a NYHA classification of II-IV. Patients’ baseline demographics, comorbid conditions, pertinent laboratory values, clinical presentations, history of hospitalization, management by VA CHF clinic, incidence of other cardiovascular events and mortality, and current medications were collected. The primary endpoint considered will be hospitalizations, and will be evaluated using univariate modeling and multivariate general estimation equation logistic regression modeling. Secondary analyses will investigate length of stay, mortality rates, associated reductions of cardiovascular hospitalizations within 30, 60, and 90 days, and co-morbidities that may have contributed to the outcomes of heart failure. For all statistical tests, a P value of less than 0.05 will be considered statistically significant.

RESULTS: Retrospective data collection is ongoing.

CONCLUSIONS: Conclusions to be presented following data collection.

VIII-4 VASOPLEGIC SYNDROME IN PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING: AN EVALUATION OF PHARMACOLOGIC MANAGEMENT. John Dechand, Katy Cox, Sherif Fanous, Baron Lloyd Hamman, Baylor University Medical Center, Dallas, TX.

PURPOSE: Limited consensus exists regarding the preferred selection of vasopressor support for vasoplegic syndrome (VS). Norepinephrine and/or vasopressin infusions are commonly administered for the management of VS. An anticipated result of undergoing cardiopulmonary bypass (CPB) is the depletion of vasopressin stores, potentiating the severity of VS. The purpose of this study is to evaluate early management of VS with norepinephrine plus vasopressin when compared to treatment with norepinephrine alone.

METHODS: The electronic medical record (EMR) at Baylor University Medical Center will be utilized to identify all subjects receiving isolated CABG surgery from January 1st, 2012 to July 31st, 2015. VS will be defined as a mean arterial pressure (MAP) < 70 mmHg or systemic vascular resistance (SVR) index < 1400 dynes x cm⁻²/m², despite adequate fluid resuscitation and vasopressor support. The primary endpoint is time to resolution of vasoplegia.

RESULTS: Research in progress

CONCLUSION: Research in progress

VIII-5 PCI IN STEMI PATIENTS: IMPACT OF GUIDELINES ON PHARMACOTHERAPY. Travis E. Whiteside, Anbell Schumaker, and R. Scott Holuby. San Antonio Military Medical Center (SAMMC), Fort Sam Houston, TX.

PURPOSE: The 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction (revision published 29 January 2013) recommends early reperfusion therapy with primary Percutaneous Coronary Intervention (PCI) as the treatment of choice for patients presenting with ST-Elevated Myocardial Infarction (STEMI). This Clinical Practice Guideline (CPG) recommends pharmacotherapy to support primary PCI that includes aspirin, P2Y12 receptor inhibitor, and GP Ibb/IIa receptor antagonist or bivalirudin alone. The purpose of this study is to determine the impact of this CPG on outcomes and pharmacotherapy practice regarding primary PCI.

METHODS: In a retrospective cohort study, subjects that presented with STEMI and treated with primary PCI are evaluated for major adverse cardiovascular events (MACE) and the type and dose of pharmacotherapy used. This is done before (calendar year 2012) and after (calendar year 2014) the CPG was published in order to evaluate the impact that this CPG may have had on patient outcomes and pharmacotherapy. The primary objective is to compare deaths due to MACE, defined as a composite of death from any cause, myocardial infarction, or stroke, up to 30 days upon presentation of STEMI. The secondary objectives include the evaluation of the anti-platelet pharmacotherapy combination by comparing the quantity and dose of anti-platelet pharmacotherapy combinations. The anti-platelet pharmacotherapy combinations reviewed will be P2Y12 inhibitors (clopidogrel, prasugrel, or ticagrelor) with GP Ibb/IIa receptor antagonists (abciximab or eptifibatide) or bivalirudin alone. Additional secondary objectives include evaluating aspirin and high intensity statin use.

RESULTS: In-progress
CONCLUSION: In-progress
The view(s) expressed herein are those of the author(s) and do not reflect the official policy or position of Brooke Army Medical Center, the U.S. Army Medical Department, the U.S. Army Office of the Surgeon General, the Department of the Army or the Department of Defense or the U.S. Government.

VIII-6
DETERMINATION OF OPTIMAL DIURESIS TARGETS FOR PATIENTS IN ACUTE DECOMPENSATED HEART FAILURE. Keith Chow, Krystal K. Haase, Shelby Needham, Eric J. MacLaughlin, Texas Tech University Health Sciences Center, School of Pharmacy, Amarillo, TX.

BACKGROUND: Patients hospitalized with acute decompensated heart failure (ADHF) commonly receive loop diuretics to relieve fluid congestion and improve morbidity. Several observational studies have observed correlations between higher diuretic doses and increased mortality. In addition, worsening renal function (WRF) during ADHF is an independent risk factor for mortality independent of baseline renal function. Beyond these associations, specific data to guide the use of diuretics, including optimal dose and diuresis targets, are lacking. Some authors suggest a maximum diuresis of 2 L/day with a more conservative goal (e.g., 1 L/day) for unstable patients. However, these targets have not been formally evaluated.

PURPOSE: The primary aim of this study was to determine whether greater rates of diuresis are associated with increased incidence of WRF in patients admitted to the intensive care unit (ICU) for management of ADHF. Secondary aims include comparison of mortality, length of stay, diuresis-related adverse events, and assessment of the impact of patient-specific factors (e.g. ADHF severity) on outcomes. Proposed alternative markers of diuresis effectiveness were also evaluated.

METHODS: This was a retrospective cohort study of adult patients admitted to a tertiary care hospital ICU between October 2013 and September 2015 with a primary ICD-9 code of heart failure. Evaluation of inclusion and exclusion criteria and data collection were performed based on manual review of medical records. Patients were included if they had a length of stay ≥ 48 hours and received a loop diuretic. Patients with severe renal failure or cardiogenic shock at baseline were excluded.

RESULTS: 141 of the 220 patients screened met inclusion criteria. There was no difference in WRF in patients with > 2 L/day of diuresis on day 1 or 2 compared to those with ≤ 2 L/day (26% vs. 38%, p=0.12). Based on preliminary analysis, patients who went on to develop worsening renal function had lower diuresis volumes at 24 hours (1.0 L vs 1.7 L, p=0.046) and 72 hours (2.9 L vs. 4.6 L, p=0.018) than those with no change in renal function. Analysis of the impact of covariates on these outcomes is forthcoming.

CONCLUSION: Diuresis ≥ 2 L/day does not increase risk of WRF. In addition, patients who developed WRF had lower diuresis volumes than their counterparts. Assessment of patient-specific factors and other treatment outcomes will provide additional information to guide initial management of patients admitted to the ICU with ADHF.

VIII-7
EVALUATION OF COMPLIANCE TO BETA-BLOCKER THERAPY FOR THE PREVENTION OF POSTOPERATIVE ATRIAL FIBRILLATION IN PATIENTS UNDERGOING CORONARY BYPASS GRAFT SURGERY. David Liu, Samuel Akinyele, Malar Narayan, Johanna Higgins, Memorial Hermann Southwest Hospital, Houston, TX.

PURPOSE: The purpose of this study is to evaluate compliance to beta-blocker prophylaxis therapy. We will also evaluate the effect of compliance to beta-blocker prophylaxis therapy on the rate of POAF in patients undergoing CABG at Memorial Hermann Southwest Heart and Vascular Institute.

METHODS: This study will be a retrospective observational cohort study evaluating 150 patients from June 2013 to June 2015 for compliance to beta-blocker prophylaxis therapy. We will also investigate the effect of compliance to beta-blocker therapy on the rate of POAF in patients undergoing CABG procedures. No interventions will be performed. Patients will not be prospectively assigned to groups.

RESULTS: Pending.

CONCLUSION: Pending.

VIII-8
EFFECTS OF PAROXETINE ON MORTALITY AND HOSPITAL ADMISSIONS IN HEART FAILURE PATIENTS. Marie Ann Ngan, Lauren Snodgrass, Chanda Jones, Kyle Filby, Ruth Garrison, Erica Filby, Avery Wight, Oklahoma City Veterans Affairs Health Care Systems (OKCVAHCS), Oklahoma City, OK.

PURPOSE: To evaluate the effects of paroxetine on adults with congestive heart failure through a composite of heart failure mortality, hospital admissions, and emergency room visits. Cardiovascular disease is the leading cause of death not only in America, but globally. Recent studies have shown that paroxetine can reverse cardiac dysfunction and remodeling post-myocardial infarction through inhibition of G-protein coupled receptor kinase 2 in mice.

METHODS: This retrospective chart review was approved by the Institutional Review Board and Research and Development Committee. Patients with a diagnosis of heart failure and taking paroxetine or fluoxetine were identified through electronic medical records from July 1, 2010 to July 1, 2015 at the OKCVAHCS. The primary objective is to identify the prevalence of heart failure mortality and/or admissions/ER visits within 1 year.

RESULTS: A data search was conducted between July 1, 2010 to July 1, 2015 and revealed that 5,625 patients had a diagnosis of heart failure, 1,098 patients had an active prescription for paroxetine, and 2,499 patients for fluoxetine. After cross-matching between the heart failure and medication treatment lists, 301 patients were identified as having heart failure and taking concomitant paroxetine or fluoxetine. There were 47 patients who were excluded due to age. Data collection is currently in progress and outcome results are pending.

CONCLUSION: Results are currently pending.
VIII-9
EVALUATION OF MODIFIED DEL NIDO VERSUS BUCKBERG SOLUTION FOR CARDIOPLEgia DURING ISOLATED AORTIC VALVE REPLACEMENT SURGERY. Kevin Welch, Chiamaka Ike, Amy Martin, Neelan Doolabh, Troy Trpkosh. Trinity Mother Frances Hospitals and Clinics, Tyler, TX.

PURPOSE: Various cardioplegia solutions are used to arrest the heart during cardiac surgeries. The objective of this study is to evaluate the difference in outcomes associated with modified del Nido versus Buckberg cardioplegia solution in isolated aortic valve surgery.

METHODS: The study was a single surgeon, single site, retrospective chart review. Electronic medical records were reviewed for a six month time period pre- and post-change of cardioplegia solution from Buckberg to modified del Nido. The primary outcome measured was aortic-cross clamp time. Secondary outcomes included cardiopulmonary bypass and operating room times, mortality, potassium, glucose, hemoglobin, and hematocrit levels, duration of mechanical ventilation, new onset atrial fibrillation, antiarrhythmic use, and hospital length of stay.

RESULTS: One hundred patients were included in analysis with 50 patients in each group. Median cross-clamp time was 7 minutes less in the del Nido versus Buckberg group (61.5 vs. 68.5, $p=0.011$). Median cardiopulmonary bypass time (101.5 vs. 114.0 minutes, $p=0.008$) and operating room time (218.0 vs. 236.0 minutes, $p=0.007$) were also less in the del Nido group. Median intra-operative peak glucose (145 vs. 175 mg/dL, $p=0.007$) and post-operative glucose (171 vs. 203 mg/dL, $p<0.0001$) also favored the del Nido group. Significantly fewer patients in the del Nido group required intra-operative blood transfusion (10 vs. 22, $p=0.02$).

CONCLUSION: The use of modified del Nido as compared to Buckberg solution resulted in significantly shorter cross-clamp, cardiopulmonary bypass, and operating room times. Intra-operative and post-operative glucose levels were also lower in the del Nido group.

VIII-10
IMPACT OF PHARMACIST-DELIVERED DISCHARGE COUNSELING ON HEART FAILURE READMISSIONS. Amanda R. Grego, Rose Agi, Toni Pitre, Sara Ruppelt, Monica Green, Harris Health System, Houston, TX.

PURPOSE: Heart failure is a chronic, deteriorating condition associated with high morbidity, high mortality, and increased healthcare expenditures. Although the prognosis of heart failure is poor, patient’s symptoms can be managed with appropriate medication, diet, and exercise. Various studies have been conducted regarding the effect of healthcare team management on readmission rates; however, few studies have been conducted to determine the pharmacist’s role in reducing heart failure readmissions. The primary objective of this study is to assess if there is an association between pharmacist-delivered discharge counseling and readmission rates of patients with heart failure.

METHODS: This study has been approved by the Harris Health System Institutional Review Board. This study is a retrospective chart review of newly diagnosed heart failure patients that have been admitted for a heart failure associated complication between January 1, 2009 and December 31, 2013. Epic Hyperspace, an electronic medical record database, will be used to identify patients with a diagnosis of heart failure that are greater than 18 years old and have been admitted to either Ben Taub General Hospital or Lyndon B. Johnson General Hospital within the time-frame stated. A random sample of 200 patients that have been discharged from the hospital due to a heart failure exacerbation will be reviewed. Data collected will include: patient demographics, patient medical history including co-morbidities, progression of disease state (NYHA classification/ACC/AHA stage), medications pertaining to heart failure, number of readmissions within Harris Health System due to heart failure complications in the year following the first admission, and occurrence of pharmacist discharge counseling during the first admission. Student t-test will be used to compare continuous data and chi-square test will be used to compare categorical data.

RESULTS: Pending

CONCLUSIONS: Pending

VIII-11
INCIDENCE AND ANALYSIS OF INFECTIOUS COMPLICATIONS IN PATIENTS WITH LEFT VENTRICULAR ASSIST DEVICES. Jeana Jacob, Kathryn Mathews Cox, Teena Sam, Jose Mendez, Baylor University Medical Center, Dallas, Texas.

PURPOSE: To investigate the infectious complications in patients with a left ventricular assist device (LVAD) at Baylor University Medical Centers, with an emphasis on incidence, etiology, temporal distribution, and risk factors. Assessment of patient outcomes will provide evaluation parameters to appraise the effectiveness of facility specific practices.

METHODS: Data was retrospectively collected from the institution’s electronic records to assess and analyze all subjects who have undergone LVAD implantation for infectious complications. Descriptive analyses will include the identification and consideration of potential risk factors predisposing subjects to infection. Continuous data will be assessed for normality of distribution and the appropriate parametric (Student’s t-test) or non-parametric analog (Wilcoxon Rank Sum) will be utilized to determine statistical significance. Categorical data will be analyzed using the Fisher’s exact test.

RESULTS: Research in progress

CONCLUSION: Research in progress

VIII-12
IMPLEMENTATION OF A STERILE COMPOUNDING WORKFLOW MANAGEMENT SYSTEM: A TIME MOTION STUDY. Linda Nguyen, Anthony Colavecchia, Khiet Nguyen, Linda Haines. Houston Methodist Hospital, Houston, TX.

PURPOSE: To evaluate how sterile compounding workflow technology (SCWT) impacts workflow turnaround time of doses dispensed, workflow efficiency, and error rate.

METHODS: This study is a single center, quality assurance, and quasi-experimental study of medications dispensed from the Sterile Products Area in central
pharmacy. Data will be collected for four weeks pre and post-implementation with a one month washout period. The primary endpoint is the mean difference in turn-around time of sterile compounds between pre and post implementation from label print time to final verification. The secondary objectives are to compare the mean turn-around time of immediate (STAT) medications and batch preparations, quantity and cost of wasted sterile products captured through pharmacy credits. Pre-SCWT medication errors were manually collected during pharmacist final verification and combined with Patient Safety Network (PSN) reported errors that were not caught by central pharmacy staff during medication preparation. Post-SCWT medication errors will be the sum of errors intercepted during technician barcode scanning of product prior to preparation and pharmacist-rejected errors at final verification. A review of all PSNs will be conducted to identify medication preparation errors not recognized by central pharmacy staff and IV technology such as coring, impurities, etc.

RESULTS: Expected results include increase efficiency, decrease medication waste, improve medication safety of sterile compounded products, and improve documentation and assist in compliance with compounding practices.

CONCLUSION: Results will ultimately provide justification for implementation of the IV workflow software at all system hospitals and satellite pharmacies throughout 2015 and 2016.

VIII-13
ASSESING THE IMPACT OF ANTICOAGULATION ON ATRIAL FIBRILLATION PATIENTS WITH A CHA2DS2-VASC SCORE OF 1 DUE TO HYPERTENSION. Carson L. Bechtold, Terri Hahn, Jennifer Gunter, Ian Pace, Central Texas Veterans Health Care System: Pharmacy Outcomes and Healthcare Analytics, Temple, TX.

PURPOSE: Within the original article that validated the CHA2DS2-VASc scoring system, it was shown that diagnosis of hypertension alone did not have a statistically significant impact on development of thromboembolic events (TE) in patients with atrial fibrillation. The “intermediate” risk group, those patients with a CHA2DS2-VASc score of 1, has unclear guidance regarding whether or not anticoagulation should be initiated. The objective of this review is to determine if atrial fibrillation with hypertension alone leads to significant changes in the rate of TE or bleeding events in anticoagulated patients as opposed to a matched cohort of patients without anticoagulation.

METHODS: Retrospective prescription, diagnostic, and clinical data were gathered from the Veterans Integrated Service Network (VISN) 17 data warehouse (VDW) which is a repository of information obtained from the electronic medical record. Health care resources cost data was obtained from VISN 17 Decision Support Services (DSS). Structured query language (SQL) was used in Microsoft SQL Management Studio 2012 to define the patient population as age <65, CHA2DS2-VASc of 1 due to hypertension, and receiving anticoagulation. A matching cohort was developed based on similar age and CHA2DS2-VASc score but without a prescription for anticoagulation. Anticoagulation was defined as active treatment with warfarin, dabigatran, rivaroxaban, or apixaban in a patient with an ICD9 or ICD10 codes related to atrial fibrillation. Thromboembolic events were identified based on ICD9 or ICD10 codes for DVT, PE, or stroke within the inpatient setting >2 months after the initial diagnosis of atrial fibrillation. Bleeding events were defined as death or unplanned hospital visit directly related to a bleeding event, or a Hgb drop > 5g/dL. Additional analyses include healthcare resource utilization directly related to anticoagulation clinic visits, unplanned hospital visits, medications, and labs. Microsoft Excel was used for data organization and analysis.

RESULTS: A preliminary cohort of patients has been identified. 148 patients with a CHA2DS2-VASc of 1 due to hypertension who are receiving anticoagulation were identified and evaluated. The patients will be compared against 486 patients with the same CHA2DS2-VASc of 1 due to hypertension who did not receive anticoagulation. Analysis of thromboembolic events, bleeding events, and aforementioned additional analyses to be presented at ALCALDE conference.

CONCLUSIONS: To be presented at 2016 ALCALDE Conference

VIII-14
APPLICATION OF THE 2013 AMERICAN COLLEGE OF CARDIOLOGY/AMERICAN HEART ASSOCIATION BLOOD CHOLESTEROL GUIDELINES IN HIV PATIENTS IN AN AMBULATORY CARE SETTING. Brittany M. Gorden, Lori A. Gordon, Maria Frontini, Daniel F. Sarpong, Jason Halperin, Linda Mihm, Kristi Issac Rapp, Xavier University of Louisiana College of Pharmacy, New Orleans, LA.

PURPOSE: Given the documented increased risk of cardiovascular events in persons living with HIV (PLHIV), appropriate application of the 2013 ACC/AHA guidelines may have an important impact on morbidity and mortality within this population. This study is being proposed to characterize and evaluate the cardiovascular risk management of HIV patients engaged in medical care within one large healthcare care system within New Orleans, LA. The primary goal is to identify the proportion of statin-eligible patients who were prescribed a statin in accordance with the 2013 ACC/AHA cholesterol guidelines.

METHODS: This study has been approved by the Xavier University of Louisiana Institutional Review Board and University Medical Center of New Orleans (UMCNO) Research Review Committee. Using an electronic health record (EHR) database, progress notes will be viewed from HIV patients visiting UMCNO Infectious Disease Center between December 1, 2013 and November 30, 2015. The following data items will be collected using the EHR databases: age, gender, race, statin prescriptions, low-density lipoprotein (LDL) levels, smoking history, diagnosis of diabetes, systolic blood pressure, history of clinical atherosclerotic cardiovascular disease (ASCVD), and presence of anti-hypertensive prescriptions. The Pooled Cohort 10-Year Risk Assessment equations will be used to calculate risk for those patients who are 40-75 years old without a previous history of clinical ASCVD or a LDL greater than or equal to 190 mg/dL. Notes from clinic visits will be reviewed before and after any lipid panel to review reasons for not prescribing a statin. The information
collected will be de-identified by assigning a randomized numerical code to the patient information.

**RESULTS:** Pending

**CONCLUSION:** Pending

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**VIII-15**


**PURPOSE:** To evaluate if a peer-led and interprofessionally developed weight loss and nutrition program will result in a clinically meaningful weight loss (5% weight reduction within 3 months).

**METHODS:** This was a pilot study conducted from October 2015 to January 2016 at a weight loss and nutrition program, Krew De Lose. The data collected will assess the impact of the weight loss intervention program by analyzing each participant's weight, height, body mass index, waist circumference and physical activity (minutes), sessions attended, and using a health behavioral survey. After the completion of the study, a year follow-up period will be used to determine if the participants can continue with their lifestyle changes.

**RESULTS:** Pending

**CONCLUSION:** Pending

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**VIII-16**

**MEDICATION ADHERENCE RATES UTILIZING A COMMUNITY PHARMACY-BASED MOBILE APPLICATION.** Brantley M. Underwood, Nancy T. Williams, Henry W. Kinnard Jr., Southwestern Oklahoma State University/Walgreen Co, Oklahoma City, OK.

**PURPOSE:** Medication adherence is a common and complex problem. One major factor of medication adherence is remembering when to take medications. There are a multitude of mobile applications available to help patients' adherence. Community pharmacists are in a position to promote these mobile technologies, which could help improve adherence. The objective of this study is to determine medication adherence rates utilizing a specific community pharmacy-based mobile application and compare these adherence rates to national averages from the National Community Pharmacists Association or evidence-based clinical guidelines.

**METHODS:** Adult patients were recruited through a computer-generated report identifying individuals who are on (1) four or more maintenance medications or (2) medications for HIV, transplant, or anticoagulation filled within the last four months. Identified patients were approached when picking up their next medication refill to verify they met all inclusion criteria and offered the opportunity to participate in this research study. Patients had a private consultation session with a pharmacist to set up the mobile application, input their medications, enable reminders, complete a basic demographic survey, and answer any questions regarding the mobile app or their current medications. Patients received a $10 loyalty reward upon enrollment into the study. Following this initial meeting, patients were instructed to use the mobile application to log all medications taken, skipped, or missed during the four-month study period. Two months into the study, patients will receive a phone call from a pharmacist to answer any questions regarding use of the mobile application and email/bring in their preliminary medication log. Mobile application data collected from each patient will include the number of missed/missed medication doses, medication doses taken within 1 hour of the scheduled time, and the number of pills taken on a daily basis. At the conclusion of the study, patients will meet with the pharmacist, email/bring in their final medication log, complete a four-question follow-up survey regarding their experience with the mobile application, and receive an additional $10 loyalty reward. This protocol has been approved by the University IRB committee, and informed consent was obtained from all patients.

**RESULTS:** As of March 2016, 18 patients have been enrolled in the study. Average age was 56 years old; gender ratio was 1:2.5 (male: female); and most patients (83 %) had private insurances. Most patients listed completing at least some college education or receiving a degree, and self-reported ethnicities were Caucasian (66%), multiple ethnicities (18%), American Indian (11%), and African-American (5%). Patients were taking an average of 10 medications per day. Fifty-nine percent reported they would be willing to pay for a medication reminder application. Enrollment occurred during January and February 2016. Data collection will last for four months from the date of enrollment in the study with the majority of patients completing the study in June 2016.

**CONCLUSION:** Pending; research data collection is ongoing.

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**VIII-17**

**PATIENTS’ PERCEPTION OF COMMUNITY PHARMACISTS AS HEALTHCARE PROVIDERS AND ITS RELATION TO WILLINGNESS TO PARTICIPATE IN PHARMACIST-PROVIDED SERVICES.** Vincent Ekena, Janel Bailey-Wheeler, Daniel Sarpong, Tammy Hart, Martha Harris, Xavier University of Louisiana College of Pharmacy, New Orleans, LA.

**PURPOSE:** To explore the extent to which patients identify community pharmacists as healthcare providers and the relationship of this perception to a willingness to engage in pharmacist-provided services.

**METHODS:** A cross-sectional survey was conducted at a retail pharmacy and a patient centered medical home (PCMH) in the New Orleans metropolitan area. A screening tool was used to identify eligible participants who are 18 years of age or older, filling at least one prescription medication within a 90 day time period, and visited the pharmacy in person to receive this medication. Qualified patients then completed a survey which collected data on the respondents’ demographics, medication use, perception of community pharmacists and their roles in the provision of healthcare, as well as willingness to participate in commonly offered pharmacist-provided services. The survey also included a free text area for the respondent to provide a more detailed explanation to select questions.

**RESULTS:** Results in progress.
Anemia is characterized by a decrease in hemoglobin or red blood cells, reducing the oxygen carrying capability of blood. It is defined as hemoglobin level below 13.0 g/dL in males or 12.0 g/dL in females. Anemia is associated with increased cardiovascular events, falls, chronic kidney disease (CKD) progression, and blood transfusions. Due to the complexity of managing anemic patients, significant barriers exist. Pharmacist-managed anemia clinics for patients with cancer and chronic kidney disease (CKD) have been implemented in other facilities with success. The objective of this project is to analyze the feasibility of implementing a pharmacist-managed ambulatory anemia clinic at a community hospital.

**Methods:** Retrospective data reviews of two groups of hospitalized patients were used to identify and support targeted populations for clinic inclusion. One review evaluated at the incidence of anemia in hospitalized patients with chronic kidney disease stages 3 to 5. The other review evaluated pre-operative anemia and need for post-surgical blood transfusions after elective total hip and total knee arthroplasties. Anemia and blood transfusion rates were used to determine the demand and potential cost savings of an outpatient anemia clinic. Physician engagement will be determined by a physician-interest survey. Physicians will be recruited to establish a patient referral source and for approval of treatment protocols and collaborative practice agreements. Cost, staffing, and barriers will be identified through a formal business plan to determine financial feasibility. The business plan will be prepared and presented for approval through the hospital executive committees. Treatment protocols designed to promote efficient care of the patient and optimize the delivery of therapy have been created. In addition, a written collaborative practice agreement between the clinic pharmacist and referring physicians will be required to fulfill state regulatory requirements.

**Results:** Rates of anemia increased as CKD progressed in a linear manner with rates above 50% being seen in CKD stages 3-5. Blood transfusion rates were significantly higher in the anemic population 2.7% vs. 0.5%; p <0.001. From the two groups analyzed, approximately 170 (26.9%) of perioperative patients and 355 (25.5%) of chronic kidney disease patients would meet eligibility criteria for the clinic based off of the protocol. Based off last year’s data, about 2 patients per day would be eligible for outpatient anemia treatment.

**Conclusion:** In progress
duration of vasopressor therapy, ICU mortality, in-hospital mortality, and duration of ICU and hospital stay.

**METHODS:** This study is a retrospective chart review of patients admitted to the medical intensive care unit (MICU) with severe sepsis or septic shock who were initiated on hydrocortisone therapy between January 1, 2010 through August 31, 2015. Patients meeting the following inclusion criteria will be evaluated: at least 18 years of age, clinical evidence of probable or documented infection requiring antibiotic therapy, a classification of severe sepsis or septic shock, requirement of at least one hour of vasopressor therapy, and concurrent systemic hydrocortisone therapy. Exclusion criteria include: transferred patients already on vasopressor therapy, patients who received short-term steroid therapy in the last six months (defined as more than 1mg/kg of prednisone or its equivalent), immunosuppressed patients (HIV or those receiving immunosuppressive therapy), and neutropenic patients (defined as <1,000 neutrophils/mm³). To adjust for possible confounders, data will be collected on baseline demographics and comorbidities; appropriateness of antibiotic therapy; severity of illness; and the median daily dose and duration of vasopressor therapy.

**RESULTS:** A total of 60 patients per group were evaluated for primary and secondary endpoints. Baseline characteristics were similar between groups except patients in RPH had a longer length of stay in the intensive care units (28.7 vs. 5.0 days, p= 0.0016). The percentages of patients who received therapeutic monitoring while on vancomycin for pharmacist-consult group and standard of care were 100% vs. 58.3% (p< 0.0001). The percentages of appropriately ordered vancomycin levels were 90.5% and 70.5%, respectively (p= 0.0027). There was no significant difference in the percentages of appropriately collected levels within therapeutic (41.0% vs. 35.5%, p= 0.8425), supratherapeutic (19.3% vs. 29.0%, p=0.3326), and subtherapeutic range (38.6% vs. 32.3%, p= 0.6877). No difference was observed in average days to therapeutic trough between groups (2.87± 1.74 vs. 2.2± 0.75, p= 0.446). More patients in RPH reached therapeutic range during therapy (46.7% vs. 31.4%, p= 0.1951), and more patients in SOC remained subtherapeutic during duration of therapy (40.0% vs. 54.29%, p= 0.1412).

**Conclusions:** A pharmacist-managed vancomycin consult service resulted in more patients receiving therapeutic monitoring, more appropriately ordered vancomycin levels, and a higher percentage of patients reaching therapeutic range.

**IX-3**

**TITLE:** THE EFFECT OF PROLONGED POSTOPERATIVE ANTIBIOTIC UTILIZATION ON PATIENT OUTCOMES. Authors: Krista Williams, Fatima Brakta, Sara Al-Dahir, Julio Figueroa, Patrick Greiffenstein, Xavier University of Louisiana College of Pharmacy/University Medical Center, New, Orleans, LA.

**Purpose:** Overuse of antibiotics is a global issue with up to 50% of antibiotics prescribed incorrectly. There are many studies that show the benefit of preoperative antibiotics in patients without infection. However, there are few that study antibiotics use postoperatively in patients without...
infection. The objective of this study is to determine if prolonged use of postoperative antibiotics has a negative impact on length of stay, nephrotoxicity, Vancomycin-resistant enterococci occurrence, and Clostridium difficile infection, development of drug resistance, direct cost and mortality.

**Methods:** This study has been approved by the Xavier Institutional Review Board, the Research Review Committee of University Medical Center and the Louisiana State University Health Science Center Institutional Review Board. It is observational in nature and will include admissions between June 1, 2013 and June 30, 2015. It is designed to examine the effects that prolonged antibiotic exposure, defined as 72 hours or greater duration, has on outcomes in post-surgical patients. Data will be obtained through retrospective chart reviews. It is hypothesized that prolonged exposure to antibiotics in post-surgical patients will lead to negative outcomes. The primary outcome monitored is length of stay. Secondary outcomes include occurrence of adverse effects including nephrotoxicity and VRE and C. difficile occurrences, associated direct cost and 28- mortality. Participants will include patients who are over 18 years old and have had surgical interventions and who are on antibiotics for greater than or equal to 72 hours without a positive cultures. Exclusions to the study populations include patients who received pre-surgical prophylactic doses of antibiotics, patients that have had less than 72 hrs of antibiotics (both consecutive and non-consecutive), and active infections. Patients data will be collected for 90 days post initiation of antibiotics, where applicable.

**Results:** In progress

**Conclusion:** In progress

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**IX-5**

**DIPPING INTO THE CLOSTRIDIUM DIFFICILE POOL.** Ryan Keul, Andy Hall, Jon Herrington, Robert Fader, Heidi Rogers, Justin Shanks, Scott & White Memorial Hospital, Temple, TX.

**PURPOSE:** In recent years, the use of alcohol based hand sanitizers has increased dramatically in the hospital setting. It is well documented that Clostridium difficile (C. difficile) is not eliminated by alcohol when utilized post-exposure. The aim of this study is to determine if alcohol based dispensers serve as potential fomites for C. difficile spores.

**METHODS:** This prospective environmental sampling study will be conducted at Scott & White Memorial Hospital. A convenience sample of 120 alcohol based dispensers will be evaluated for the presence of C. difficile. Sampling will be conducted at least 48 hours after a positive C. difficile polymerase chain reaction (PCR) result. Alcohol based dispensers will be cultured using environmental collection devices, according to manufacturer recommendations. Patients with PCR stool assay positive for C. difficile toxin and receiving inpatient treatment will be included. Patients with C. difficile disease who have received treatment within one month prior to hospitalization will be excluded. The primary endpoint will evaluate the percent difference between “in patient room” and “outside patient room” alcohol based dispensers with culture positive for C. difficile.

**RESULTS:** The preliminary results will be presented. Data collection is on-going.

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**IX-6**

**EVALUATION OF DAPTOMYCIN DOSAGE ON CLINICAL OUTCOMES IN VANCOMYCIN-RESISTANT ENTEROCOCCAL INFECTIONS AT A VETERANS AFFAIRS ACADEMIC TEACHING HOSPITAL.** Ian E. Dunne, Kathleen Morneau, Andrew Hunter, Ronald Cotton, Qianzi Zhang, Michael E. DeBakey VA Medical Center, Houston, TX.

**BACKGROUND:** Daptomycin bears increasing utility for multi-drug resistant bacterial infections; however, few recommendations exist for optimal dosing. While safety at doses greater than 6 mg/kg/day has been demonstrated successfully, there is sparse literature evaluating optimal dosing versus clinical outcomes such as clinical cure, safety, and mortality. In practice, daptomycin is dosed according to manufacturer recommendations, clinical experience, or literature support, which may lead to therapeutic inconsistencies.

**PURPOSE:** The objective of this study will be to determine the association between daptomycin dosing and 30-day mortality in patients at the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC) treated for vancomycin-resistant enterococcal (VRE) infection.

**METHODS:** This study has been approved by the Institutional Review Board. Using the computerized patient record system, a retrospective chart review of patients with VRE infection treated with daptomycin will be conducted. Included patients are those greater than 18 years old admitted to the MEDVAMC between July 1, 2005 and June 30, 2015 receiving daptomycin for 72 hours following a positive VRE culture. Exclusion criteria include VRE sputum cultures, concurrent antibiotics with linezolid or tigecycline, and curative surgery. For those patients meeting inclusion criteria, the following will be assessed: dosage variations, 30-day mortality, and therapy duration. Safety monitoring will include creatine phosphokinase laboratory values and monitoring patterns, treatment discontinuation due to adverse events, and serum creatinine values. Additional clinical data collection will include patient characteristics, patient comorbidities, primary diagnosis, infection site, enterococcal species, source control, serum albumin, ICU admission, daptomycin MICs, BMI, Charlson Comorbidity Index at initiation of daptomycin therapy, current admission antibiotics, concurrent HMG-CoA reductase inhibitor or fibrate use, and adverse events. Statistical analysis will utilize multivariate logistic regression with 30-day mortality as the dependent variable and daptomycin dosing as the independent variable. Descriptive statistics will be provided for dependent variables, independent variables, efficacy covariates, and other variables of interest.

**RESULTS:** Research in progress.

**CONCLUSION:** Research in progress.
IX-7
NASAL MRSA PCR TESTING REDUCES DURATION OF MRSA-TARGETED THERAPY IN PATIENTS WITH SUSPECTED MRSA PNEUMONIA. Nidhu Baby, Andrew Faust, Terri Smith, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

PURPOSE: To evaluate the impact of pharmacist-ordered MRSA PCR testing on the duration of empiric MRSA-targeted antibiotic therapy in patients with suspected pneumonia.

METHODS: This is a retrospective analysis of patients on vancomycin or linezolid for pneumonia before and after the implementation of pharmacist-driven orders for nasal MRSA PCR testing. Under this protocol, pharmacists were able to order nasal MRSA PCR testing for any patient started on MRSA-targeted therapy for suspected MRSA pneumonia. If the test resulted as negative, the pharmacist was instructed to call the prescriber to discuss discontinuation. The pre-PCR group patients were selected March 1 to March 31, 2015 and post-PCR group patients were selected from November 1 to December 4, 2015. Patients were included if they were adults >18 years of age and initiated on vancomycin or linezolid for pneumonia. For the post-PCR group, patients were included only if they had an MRSA PCR ordered. Exclusions to study participation included death during linezolid or vancomycin therapy, use of MRSA nasal culture, or presence of treatment indication other than pneumonia or sepsis due to pneumonia. Primary endpoint assessed was the duration of vancomycin or linezolid therapy, with secondary endpoints including days to clinical cure, readmission rate at 30 days, incidence of acute kidney injury during therapy, length of hospital stay, and mortality.

RESULTS: After screening of 368 patients, 57 patients met inclusion criteria (27 in the pre-PCR testing group and 30 in the post-PCR testing group). Baseline characteristics were similar between the two groups. The majority of patients were classified as HCAP (68.4%) or HAP (19.3%) and 94.7% of all patients received vancomycin as their MRSA-targeted therapy. Use of the nasal MRSA PCR test reduced the mean duration of MRSA-targeted therapy by 46.6 hours (27.4 ± 18.7 vs. 74.0 ± 48.9 hours; 95% CI, 27.3 – 65.8; p < 0.0001), also resulting in fewer patients in the PCR group requiring vancomycin serum levels (16.7% vs. 48.1%; P=0.02). Acute kidney injury occurred in 26% of patients in the pre-PCR group compared to 3.3% after PCR implementation (P=0.02). There were no significant differences between the pre- and post-PCR groups regarding days to clinical improvement (1.78 ± 2.52 vs. 2.27 ± 3.34; p = 0.54), hospital length of stay (11.04 ± 9.5 vs. 8.2 ± 7.8; p =0.22), or hospital mortality (14.8% vs. 6.7%; p = 0.41).

CONCLUSION: Based on this retrospective analysis, implementation of pharmacist-ordered PCR testing for patients with suspected MRSA pneumonia reduced the duration of empiric MRSA-targeted therapy without negatively impacting patient outcomes.

IX-8
BLOODSTREAM INFECTIONS IN PATIENTS WITH CIRRHOSIS: ETIOLOGIC AGENTS, RISK FACTORS FOR MULTIDRUG RESISTANT ORGANISMS, AND PATIENT OUTCOMES. Jennifer Addo, Hannah Russo, Raymond Yau, Kimberly Putney, Alejandro Restrepo, Kevin Garey, Amelia Sofjan, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: Recent data suggest that the prevalence of bloodstream infections (BSI) due to a multidrug resistant organism (MDRO) in cirrhotic patients is increasing, but epidemiological data in the United States are lacking. Delays in the diagnosis and start of appropriate treatment result in higher mortality. The objective of this study was to describe the microbiology of BSI in patients with cirrhosis, determine predictors of 30-day all-cause mortality, and identify risk factors for BSI with a MDRO.

METHODS: The electronic medical record identified patients with liver cirrhosis admitted to the study hospital between 5/2013 and 06/2015. Patients were divided into three groups: case group 1, case group 2, and control group. Case group 1 comprised cirrhotic patients with BSI due to a MDRO. Case group 2 comprised cirrhotic patients with BSI due to a non-MDRO. Control group included cirrhotic patients without BSI. Case groups 1 and 2 were utilized to answer specific aims 1 and 2 (describe microbiology of BSI and identify predictors of 30-day all-cause mortality, respectively). All patients (case group 1, case group 2, and control group) were utilized to answer specific aim 3 (identify risk factors for BSI with a MDRO) using a case-case-control design. Two logistic regression models were created. Model 1 (case group 1 vs control group) evaluated risk factors for MDROs. Model 2 (case group 2 vs control group) evaluated risk factors for non-MDROs. By comparing independent risk factors present in the two multivariate models, we identified unique risk factors for MDROs.

RESULTS: Analysis consisted of 124 total patients. Staphylococcus aureus was the most common gram positive organism, while Enterobacteriaceae were the most common gram negative organisms among cirrhotic patients with BSI. Thirty-two percent of BSI was due to MDROs. Among MDROs, MRSA and gram-negative organisms were equally prevalent. While research for risk factors of mortality is still on-going univariate analysis demonstrated that patients in the MDRO group were more likely to have received inappropriate empiric therapy (35% vs 14%, p=0.061). They also had a higher 30-day all-cause mortality rate (15% vs 2%, p=0.095) and a longer length of stay (median 17 days vs 9 days, p=0.042). Based on the results of the two logistic regressions and after adjusting for confounders, nosocomial acquisition of infection (adjusted odds ratio 4.49, 95% CI 1.13-17.90, p= 0.033) and use of 3rd generation cephalosporins within the past 90 days (adjusted odds ratio 6.82, 95% CI 1.92-24.21, p=0.003) were found to be independent predictors of BSI due to a MDRO.

CONCLUSION: MDROs made up a third of BSI in this patient population, with the most common organisms being S. aureus and gram-negative organisms. Nosocomial acquisition of infection and use of 3rd generation cephalosporins within 90 days of BSI were unique risk factors for MDROs. These data suggest that cirrhotic patients with risk factors for MDRO identified in this study
may benefit from broad spectrum empirical antimicrobial agents.

IX-9
IMPACT OF THE VERIGENE GRAM-POSITIVE BLOOD CULTURE ASSAY ON TIME TO APPROPRIATE ANTIBIOTIC THERAPY FOR STAPHYLOCOCCUS AUREUS BACTEREMIA AT AN ACADEMIC MEDICAL CENTER. R. Scott Ferren, Natalie Williams-Bouyer, Regina L. Ramirez, Wai-Ying M. Lam, UTMB Health, Galveston, TX.

PURPOSE: Rapid diagnostic assays allow for faster identification and susceptibility testing of an organism, leading to faster appropriate antimicrobial selection in conjunction with antimicrobial stewardship interventions. The Verigene Gram-positive blood culture (BC-GP) test is a rapid diagnostic assay that identifies organisms from positive blood cultures, including methicillin-susceptible Staphylococcus aureus (MSSA) and methicillin-resistant Staphylococcus aureus (MRSA). The purpose of this study is to evaluate the impact of the Verigene BC-GP assay on time to appropriate antibiotic therapy for Staphylococcus aureus bacteremia without an antimicrobial stewardship team intervention.

METHODS: A retrospective chart review was conducted for all adult patients greater than 18 years old. Patients admitted between June 2014 and December 2014 were defined as the pre-Verigene group, and patients admitted between June 2014 and December 2014 were defined as the post-Verigene group. Patients with a positive blood culture for only MSSA or MRSA were included. A comparison of time to appropriate antibiotics in the pre-Verigene group and the post-Verigene group was conducted. Secondary endpoints included hospital length of stay, 30-day all-cause mortality, and total cost of administered antimicrobials.

RESULTS: A total of 190 patients were analyzed. Of the 190 patients, 76 met inclusion criteria for the study. The pre-Verigene group had 31 patients while the post-Verigene group had 45 patients. The average age in the pre-Verigene group was 56.7 years compared to 59.9 years in the post-Verigene group. At the time of culture collection, 13 patients in the pre-Verigene group and 16 patients in the post-Verigene group were in the intensive care unit. More patients had blood cultures positive for MSSA compared to MRSA compared to the post-Verigene group (21 of 31 patients in the pre-Verigene group and 26 of 45 patients in the post-Verigene group with MSSA). The average time to identification was 71.3 hours and 25.6 hours in the pre-Verigene group and the post-Verigene group, respectively. Time to appropriate antibiotics in the pre-Verigene group compared to the post-Verigene group was 115.8 hours versus 62.6 hours, respectively. For patients with MRSA bacteremia, 25 of 29 patients were initially started on vancomycin as monotherapy after culture identification. Out of the 47 patients with MSSA bacteremia, 29 patients were switched to a first-line beta-lactam antibiotic as monotherapy (21 patients on nafcillin and 8 patients on cefazolin). Hospital length of stay was 16 days for the pre-Verigene group compared to 13.5 days in the post-Verigene group.

CONCLUSION: The Verigene BC-GP test improved time to identification of the organism and time to appropriate antibiotics in patients with a Staphylococcus aureus bacteremia. The hospital length of stay was also shortened with the implementation of the assay. The addition of antimicrobial stewardship intervention can further improve the time to appropriate antibiotics.

IX-10
INPATIENT MONITORING OF PROCALCITONIN TO DETERMINE APPROPRIATE ANTIBIOTIC TREATMENT OF RESPIRATORY TRACT INFECTIONS IN AMERICAN INDIANS AND ALASKA NATIVES AT A 72-BED HOSPITAL. Valerie R. Barnett, Stacy C. Gee, T. Ross Clark, & Travis Freeze, Chickasaw Nation Medical Center, Ada, OK.

PURPOSE: To implement procalcitonin monitoring for patients with an admission diagnosis of lower respiratory tract infection at Chickasaw Nation Medical Center in order to decrease unnecessary antibiotic exposure.

METHODS: A retrospective analysis of procalcitonin use was performed prior to implementation of procalcitonin monitoring. A protocol was then designed utilizing algorithms from current randomized controlled trials supporting procalcitonin monitoring. This protocol allows pharmacists to order procalcitonin labs in patients with an admission diagnosis of chronic obstructive pulmonary disease or asthma exacerbation, pneumonia, or bronchitis. The protocol was approved in October 2015. Pharmacists utilize a newly created template to document recommendations to physicians for early cessation of antibiotic treatment and have the prescribing physician sign off on the note. Retrospective chart reviews will reveal results of the intervention including length of antibiotic treatment, adherence with the protocol, recommendation acceptance by physicians, length or hospitalization, and treatment failure (re-hospitalization or antibiotics within 30 days for the same indication). These parameters will be compared to findings from the retrospective analysis of baseline procalcitonin use in lower respiratory tract infections.

RESULTS: N/A

CONCLUSION: N/A

IX-11
ASSESSMENT OF ANTIMICROBIAL USE IN THE INFANT SPECIAL CARE UNIT UTILIZING THE CENTERS FOR DISEASE CONTROL AND PREVENTION 12 STEP CAMPAIGN. Hoang A. Huynh, Priscilla M. Ayerite, Regina L. Ramirez, C. Joan Richardson, UTMB Health, Galveston, TX.

PURPOSE: Antibiotics are among the most frequently prescribed medications in the neonatal intensive care unit (NICU). The Centers for Disease Control and Prevention (CDC) 12 Step Campaign was designed to educate clinicians on appropriate use of antimicrobials in various hospital settings; however, there are few studies documenting its application to NICUs. The purpose is to assess antibiotic use in the infant special care unit (ISCU), our equivalent level of Neonatal Intensive Care Unit, and to determine its appropriateness compared to the Centers for Disease Control and Prevention (CDC) 12 Step Campaign modified for neonates.

METHODS: A retrospective chart review of patients admitted to the ISCU who received intravenous antibiotics between January 1, 2013 and December 31, 2014 is being conducted. Included patients are those who weighed less
than or equal to 1500 grams or those who required surgical intervention regardless of weight. Excluded patients are those who required extracorporeal membrane oxygenation or died within 72 hours of antibiotic exposure. Data collection includes basic demographics, relevant maternal and neonatal factors, and microbiology results. Additionally, information regarding antibiotics use, such as indication, total treatment days, number of cycles, and number of days within the cycle, is being recorded. Then the use of antibiotics is categorized as appropriate versus inappropriate using the examples of inappropriate use modified from the hospitalized children’s CDC 12 Step Campaign and published guidelines on neonatal infectious diseases management.

RESULTS: The full analysis of antibiotic use in the ISCU will be evaluated for 186 patients once data collection completes. Among the included patients, 171 patients had birth weight of 1500 g or less, 9 patients required surgical intervention, and 6 patients required surgical interventions and weighed less than or equal to 1500 g. Preliminary baseline characteristics is well balanced in gender distribution with 55.4% of patients are female. Most patients in the study weighed between 1001 g to 1500 g (58.6%), and the most frequent reason for requiring surgical intervention is gastroschisis (5.9%). Remaining results will be provided once data analysis completes.

CONCLUSION: Study is still ongoing.

IX-12
EVALUATION OF PROPHYLACTIC ANTIBIOTIC REGIMENS ON RECURRENCE AND MORTALITY IN SPONTANEOUS BACTERIAL PERITONITIS. Shelley S. Gleass1,2, Rebecca L. Attridge1,2, Rebecca L. Brady1,2, Russell T. Attridge1,3 1University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX, 2The University of Texas Health Science Center at San Antonio, San Antonio TX, 3South Texas Veterans Health Care System, San Antonio, TX.

PURPOSE: Current guidelines recommend antibiotic prophylaxis in patients with cirrhosis who survive an episode of spontaneous bacterial peritonitis (SBP) to decrease recurrent SBP and improve survival. There are limited data to describe the current epidemiology of SBP and to support specific prophylactic regimens, leading to variations in prescribing practices. Additionally, SBP prophylaxis has been associated with increased drug-resistant infections, increased gram-positive bacterial infections, and empiric antibiotic failure. This study compares different prophylactic antibiotic regimens in patients with cirrhosis and a history of SBP for SBP recurrence and mortality at 90 days and one year.

METHODS: We performed a retrospective cohort study of patients ≥18 years of age with an SBP diagnosis from 2010-2015 at two academic medical centers. Demographics, clinical characteristics, and outcomes will be summarized with descriptive statistics and analyzed using chi-square, Fisher’s Exact test, and the student’s t-test, as appropriate. Multivariable logistic regression will be performed to identify independent predictors of SBP recurrence, as well as 90-day and one-year mortality.

RESULTS: Data collection is ongoing with expected completion in March 2016.

CONCLUSION: Conclusions pending completion of data collection and final data analysis.

IX-13
EVALUATING DIFFERENCES IN MORTALITY WITHIN THE SUSCEPTIBLE MINIMUM INHIBITORY RANGE: COMPARISON OF PATIENTS WITH POSITIVE PSEUDOMONAS AERUGINOSA CULTURES WHO ARE TREATED WITH PIPERACILLINE/TAZOBACTAM OR CEFEPIME. Brooke Herndon, Stephanie Bird, Shazia Raheem, Amit Pulickan, Charlie Lan, Daniel Musher, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

BACKGROUND: The Clinical and Laboratory Standards Institute (CLSI) provides standards regarding susceptibility of organisms to antibiotics by publishing breakpoints denoting organisms as susceptible, intermediate, or resistant. According to the CLSI 2015 Guidelines, the susceptible breakpoints for cefepime and piperacillin/tazobactam against Pseudomonas aeruginosa (PsA) are ≤ 8 mcg/mL and ≤ 16 mcg/mL, respectively. Limited data currently exists comparing differences in mortality outcomes between the two antibiotics within the susceptible MIC range.

OBJECTIVES: The primary objective of this study is to compare all-cause mortality (30-day or in-hospital) between cefepime and piperacillin/tazobactam within the susceptible minimum inhibitory range. The secondary objectives include length of stay (hospital and ICU), 30-day hospital readmission rates due to infectious cause, escalation of care, and microbiological treatment failure within 30-days.

METHODS: A retrospective chart review will be conducted on all patients admitted to the Michael E. DeBakey Veterans Affairs Medical Center between January 2014 – December 2015 with positive blood or sputum Pseudomonas aeruginosa cultures who are treated with either cefepime or piperacillin/tazobactam. Patients with positive sputum cultures must also display 2 or more systemic inflammatory response syndrome criteria and have evidence of consolidation of imaging to ensure only patients who are actively infected are included in the study. Exclusion criteria include pregnant women, patients who do not receive either cefepime or piperacillin/tazobactam as initial treatment within 48 hours of when culture is obtained, and patients whose isolates are reported as intermediate or resistant to cefepime or piperacillin/tazobactam. The primary endpoint and baseline characteristics will be analyzed using chi-squared or Fischer’s exact test as appropriate; a p-value of less than 0.05 will be considered significant. Secondary endpoints will be analyzed using chi-square for categorical variable and student’s t-test will be used for continuous variables.

RESULTS: Research in progress.

CONCLUSION: Research in progress.
IX-14
COMPARISON AND EVALUATION OF VANCOMYCIN TROUGH LEVELS IN CRITICALLY ILL OBESE PEDIATRIC PATIENTS.
Dana Boeck, Bryson Duhon, Kelly Reveles, Elizabeth Hand, University Health System, San Antonio, Texas.

BACKGROUND: Vancomycin is the drug of choice for invasive methicillin-resistant Staphylococcus aureus infections in pediatric patients. Although data pertaining to dosing in adults are well-documented, appropriate weight-based pediatric dosing recommendations, specifically in critically ill overweight and obese children, are lacking. The purpose of this study was to compare vancomycin serum concentrations in critically ill pediatric patients of varying body mass index percentiles (BMI%).

METHODS: This was a single-center, retrospective chart review of pediatric patients in the pediatric intensive care unit receiving scheduled vancomycin between July 1, 2009 and August 31, 2015. Patients were differentiated based upon BMI%.

RESULTS: A total of 130 patients met inclusion criteria: 76 with normal body weight (NBW), 21 considered overweight (85th–94th percentile), and 33 deemed obese (≥95th percentile). Median vancomycin doses were 50 mg/kg/day for NBW patients and 45 mg/kg/day for overweight and obese patients. There was a trend toward higher initial trough levels in overweight (10.2 mg/L) and obese children (9.3 mg/L) when compared the NBW cohort (7.7 mg/L)(p = 0.18 and p = 0.08, respectively). Significantly more overweight patients (52.4%) achieved initial troughs within the therapeutic range (10 – 20 mcg/mL) when compared to those with NBW (23.7%) (p = 0.01). More NBW patients obtained subtherapeutic troughs than overweight patients (p = 0.03). Supratherapeutic concentrations were more common in obese (18.2%) compared to NBW (4.8%) children, although not statistically significant (p = 0.11).

CONCLUSION: Critically ill overweight and obese pediatric patients may obtain higher initial vancomycin concentrations compared with NBW patients. However, these patients may also be more likely to achieve supratherapeutic vancomycin concentrations with more aggressive dosing, increasing the risk for nephrotoxicity. Further investigation into the optimal dosing strategy for this patient population should be undertaken.

IX-15
EVALUATING THE USE OF ANTIBIOTICS IN PATIENTS WITH A PENICILLIN OR CEPHALOSPORIN ALLERGY. Linda Paul, Kevin Purcell, Andre Andalcio, Armando Garcia.

Purpose: To assess physician prescribing choices in patients with penicillin (PCN) or cephalosporin (CEPH) allergy since these patients are most often prescribed less effective, broad spectrum, or an expensive antibiotic than the drug of choice for their condition.

Methods: A retrospective evaluation was done of all patients with PCN or CEPH allergy who received an antibiotic for >1 day and were discharged from Mission Trail Baptist Hospital between January 1, 2015 and June 30, 2015. Data on allergy, indication for treatment, and antibiotics prescribed were collected from the pharmacy information system and electronic medical record. Antibiotic cost was obtained from the wholesaler ordering system. Information on drug of choice for specific diseases was acquired from various medical references.

Results: 265 (8.2%) of 3,247 patients discharged during the evaluation period had a PCN or CEPH allergy documented in the medical record and received an antibiotic for >1 day. Of these patients, 186 (70.2%) had no information recorded about the type of reaction. 48 (18.1%) of the 265 patients received a PCN or CEPH. Of these 48 patients, 6 (12.5%) had a history of skin rash, 7 (14.6%) of hives, and for 35 (72.9%) patients there was no reaction stated. Of the 217 patients that did not receive a PCN or CEPH, 191 (88.0%) had an indication for receiving PCN or CEPH as the preferred drug. The most common choices in these patients either alone or in combination were levofloxacin (45.5%), vancomycin (34.0%), and meropenem (27.2%).

Conclusions: Physicians prescribed a PCN or CEPH antibiotic in <20% of patients with an allergy.

Disclosure: The author has nothing to disclose.

IX-16
EVALUATION OF ANTIBIOTIC UTILIZATION IN AN EMERGENCY DEPARTMENT PRIOR TO IMPLEMENTATION OF A FORMAL ANTIMICROBIAL STEWARDSHIP PROGRAM.
Megan Geurds, Chris Tawwater, Jennifer Greille, Texas Tech University Health Science Center School of Pharmacy, Abilene, Texas.

Background: On a daily basis, emergency department (ED) providers are faced with many obstacles such as high volume, limited patient history, diagnostic uncertainty, varying levels of severity, and quick decision making. Many times this can lead to the overuse of antibiotics, resistant pathogens, inappropriate antibiotic selection, under/over dosing, adverse events, and drug-interactions.

To enhance patient safety, reduce inappropriate antimicrobial use, and prevent antimicrobial resistance, antimicrobial stewardship programs (ASP) were created. Even though ASPs have been widely implemented in the inpatient setting nationwide, ASPs in the ED setting are lacking. This study is designed to determine current prescribing habits of antimicrobial agents and to identify areas where improvement is needed to provide better patient outcomes and decrease antimicrobial resistance.

Methods: The study is a single center, retrospective study of ED patients who were discharged prior to final culture results at a community hospital. All patients with positive cultures discharged to the community setting between January 1, 2015 and December 31, 2015 will be included in this study. Patients will be excluded if they are less than 18 or greater than 89 years of age, pregnant, prisoners or wards of the state, transferred from the ED to inpatient status, or discharged to another institution. Data collection consists of patient demographics, positive culture results (i.e. blood, urine, sputum, stool, or wound), antibiotics prescribed, and clinical outcomes. The primary outcome of the study is time to appropriate antibiotic. Secondary outcomes include culture source, time to culture reviews, appropriateness of antimicrobial therapy according to IDSA guidelines (i.e. community acquired pneumonia, urinary tract, skin or soft tissue, or Clostridium difficile infection), appropriateness of dose selection, and 30 day readmissions.

Result: Data collection is ongoing and results are in progress.
PURPOSE: To assess the efficacy of various treatment regimens for chorioamnionitis at Woman's Hospital. The primary outcome of treatment failure was defined as any of the following: maternal and/or fetal mortality, persistent infection, medical intervention(s) utilized to address persistent infection, and readmission to Woman’s Hospital within 30 days for persistent or recurrent infection. As a secondary objective, a drug utilization evaluation of those successfully treated with chorioamnionitis was conducted, including average length of stay and treatment costs.

METHODS: Upon Woman’s Hospital IRB approval, a retrospective review of medical records from the institution’s electronic records dated October 1, 2012 through September 30, 2015 was conducted. Patients diagnosed with intrapartum chorioamnionitis were identified via ICD-9 diagnosis code. Candidates with localizing signs of infection, recent antibiotic prophylaxis for preterm premature rupture of membranes, or empiric treatment for sepsis were excluded. Data collection included demographic information, clinical findings consistent with diagnosis (fever, tachycardia, uterine tenderness, foul/purulent amniotic fluid), treatment strategies, and measures for the primary outcome of treatment failure. Descriptive statistics were utilized to quantify results.

RESULTS: A total of 471 patients met inclusion criteria. Chorioamnionitis was successfully treated in 99.4% (468/471) of patients. Overall, 98.9% (276/279) achieved success with ampicillin, gentamicin (plus clindamycin or cefotetan for cesarean sections), 100% (41/41) with ampicillin/sulbactam, 100% (29/29) with cefotetan, and 100% (122/122) with other regimens. Three patients failed therapy; all three delivered via cesarean section and were treated with ampicillin, gentamicin and clindamycin. Twenty-nine different regimens were in practice, with an average duration of therapy of 28.7 ± 16.7 hours postpartum. The most common regimen was ≤ 24 hours of ampicillin and gentamicin. A single agent of ampicillin/sulbactam 3g IV every 6 hours was the most cost-effective regimen for treating chorioamnionitis. The average maternal length of stay was 63 ± 15 hours in the ampicillin and gentamicin group and 58 ± 14 hours in the ampicillin/sulbactam group.

CONCLUSION: Treatment failures occurred in 0.4% of patients; all of which were resolved with antibiotics and no mortalities. With twenty-nine different antibiotic regimens in practice, it cannot be concluded that these regimens are efficacious without further study. The regimen of ampicillin 2g every 6 hours and gentamicin 1.5 mg/kg every 8 hours was the most common; with a failure rate of 1.1% it sufficiently treated chorioamnionitis and was a cost-effective option. The use of a single agent antibiotic may be a promising cost-effective option, but needs more studies to ensure efficacy.
increases. Clinical outcomes and risk factors should be evaluated with each antibiotic choice. This is a retrospective study at a 500-bed community hospital. This study was approved by the Institutional Review Board. Patients who developed ESBL infection during hospitalization will be included between January 2012 and September 2015. Patients who are less than 18 years old, pregnant, or incarcerated will be excluded. Primary outcome is hospital mortality. Secondary outcomes include duration of therapy, hospital stay, ICU stay, and ICU mortality. The following patient data is being collected for analysis: age; gender; previous antibiotics and duration of therapy; infection history; comorbidities; diagnosis of infection; culture results including MIC susceptibilities of levofloxacin, cefepime, and carbapenem; antibiotic choice of ESBL-producing Enterobacteriaceae; and treatment duration. Descriptive statistics will be used to quantify patient characteristics, as well as for analysis of the primary and secondary outcomes. Chi-square test and ANOVA will be used for categorical data and continuous data respectively. Multivariate regression analysis will be used to identify risk factors that may have association with clinical outcomes. The results and conclusion are pending.

X-1 INCIDENCE OF ACUTE KIDNEY INJURY WITH VANCOMYCIN AND BETA-LACTAM ANTIBIOTICS IN ADULT HOSPITALIZED PATIENTS. Jessica Guastadisegni, MaiCuc Tran, DeeDee Hu, Memorial Hermann Memorial City Medical Center, Houston, TX.

Purpose: The combination of vancomycin and a beta-lactam is a common broad spectrum therapy gaining recognition for causing acute kidney injury. Manufacturers report the incidence of nephrotoxicity to be less than one percent for piperacillin/tazobactam and meropenem, and absent with cefepime. Recent literature suggests that, when used in combination with vancomycin, piperacillin/tazobactam results in higher rates of nephrotoxicity (16-35 percent) than cefepime (13 percent), and there is no research regarding meropenem. This study aims to compare the incidence of acute kidney injury in patients receiving monotherapy or combination therapy of vancomycin, cefepime, piperacillin/tazobactam, and/or meropenem at our tertiary care community hospital.

Methods: The Institutional Review Board approved this single-center, retrospective cohort study including adult patients that received a minimum of 48 hours of intravenous vancomycin, cefepime, piperacillin/tazobactam, or meropenem, alone or in combination, for any indication. Patients with a baseline serum creatinine obtained within 24 hours prior to administration of antibiotics and at least two values measured on two separate days during admission at our hospital from January 2014 to August 2015 were included in the study. Patients were identified using the electronic medical record system, and the following data was collected: patient demographics, allergies, inpatient location, past medical history, medications within the previous 90 days, serum creatinine, steady-state vancomycin concentrations, indication for antibiotics, dates and dosing of targeted medication orders, and concomitant nephrotoxic agents. All data was recorded without patient identifiers and kept confidential. The primary outcome is the incidence of acute kidney injury during therapy with piperacillin/tazobactam and vancomycin compared to vancomycin alone, or within 72 hours after therapy discontinuation. Secondary outcomes include incidence of acute kidney injury during therapy with cefepime and meropenem alone or in combination with vancomycin, time to acute kidney injury from start of antibiotic(s), days of acute kidney injury, acute kidney injury resolution status, hospital length of stay, and disposition.

Results: N/A

Conclusion: N/A

X-2 ESTABLISHING KEY ANTIBIOTIC UTILIZATION METRICS FOR AN ANTIMICROBIAL STEWARDSHIP DASHBOARD. Jason Serna, Shivani Patel, Patti Romeril, Memorial Hermann Southwest Hospital, Houston, TX.

BACKGROUND: Traditionally, Antimicrobial Stewardship Programs (ASPs) have focused their efforts and success on reducing the cost of antimicrobial therapy while the impact of ASPs on clinical outcomes is not routinely reported. Documentation and assessment of key ASP strategies will become increasingly important as Centers for Medicare & Medicaid Services (CMS) will require antimicrobial stewardship as a condition for participation in 2017. Currently, the optimal method for measuring the success of an ASP has yet to be determined. Incorporating the use of an ASP clinical dashboard may serve as a valuable tool for ASPs in the analysis of antibiotic use and identifying key areas of improvement.

PURPOSE: To establish metrics and quality indicators (QIs) to support and promote the goals of a community hospital ASP by tracking trends in antibiotic use and resistance.

METHODS: This is a single-center, retrospective chart review conducted at a 568-bed community hospital from January 2015 to December 2015. Patients over 18 years of age who required hospital admission and received at least one dose of any defined antibiotic within this study will be included in analysis. Metrics and QIs will be chosen based on national guidelines, recommendations from key organizations (Centers for Disease Control and Prevention, CMS, and Infectious Diseases Society of America), and site-specific quality measures which will require validation. Patient charts will be reviewed for antibiotic spectrum use, antibiotic days of therapy (DOT), antibiotic length of therapy (LOT), disease focused LOT, and clinical service line (CSL); hospital resistance rates and hospital-acquired infections will also be used as clinical outcomes measures. Data extraction will be collected and stratified by month, which will be incorporated into the design of a clinical dashboard.

RESULTS: Research in progress.

CONCLUSION: Research in progress.
X-3
PREDICTING VANCOMYCIN TROUGHS: A COMPARISON OF TWO PHARMACOKINETIC MODELS VERSUS A VANCOMYCIN DOSING NOMOGRAM. Jennifer Jiang, Nathan Fewel, Eileen Stock, Mia Ta, Central Texas Veterans Health Care System, Department of Veterans Affairs, Temple, TX.

PURPOSE: To compare measured vancomycin troughs with troughs predicted from a vancomycin dosing nomogram, Matzke, and Bauer pharmacokinetic (PK) methods.

METHODS: A prior retrospective observational study evaluated a vancomycin nomogram, and described the proportion of patients within goal trough range, and the proportion of measured troughs within 5 mcg/mL of prediction. This post-hoc analysis used the Matzke and Bauer methods to predict troughs using data from patients treated with the nomogram. Predicted troughs were compared to measured troughs for all PK methods and for patients greater than or less than 110 kg.

RESULTS: A total of 456 patients were included in the analysis. The Bauer method had the best correlation between measured and predicted troughs, followed closely by the Matzke method. The nomogram had weaker correlation but was still significant (p<0.01), except for the nomogram subgroup with patients > 110 kg (p=0.28). All three PK methods had a difference of less than 2 mcg/mL between average predicted troughs and measured troughs. The Bauer method had the best accuracy with an overall difference of 0.34 mcg/mL, and was consistent for patients greater than or less than 110 kg.

CONCLUSION: The nomogram offers an accurate dosing method that is simple to use and requires minimal calculation. It includes dosage regimens, PK variables, and predicted peak and trough levels. The Bauer and Matzke methods have greater accuracy for predicting troughs; however, the methods require the use of long PK equations. The Bauer method showed greatest accuracy and correlation. A vancomycin calculator using the Bauer method was created and is being developed into a webpage.

X-4
IMPACT OF AN EMERGENCY DEPARTMENT’S PHARMACIST-DRIVEN CULTURE FOLLOW-UP PROGRAM. Laura C. Johnson, Brittney Murdock, Craig Cocchio, Amy Martin, Trinity Mother Frances Hospital, Tyler, TX.

PURPOSE: To analyze the impact of a pharmacist-driven culture follow-up program at Trinity Mother Frances Hospital emergency department (ED) on urinary tract infection treatment failure rates.

METHODS: Data was collected retrospectively through EMR chart review. Positive urine cultures were reviewed for a 6-month time period before and after pharmacist intervention. Historically, culture review was managed by nursing staff. The primary outcome was a composite endpoint of treatment failure including ED or Trinity Clinic revisit within 14 days or drug-bug mismatch.

RESULTS: A total of 384 positive urine cultures were included and reviewed for analysis. Revision of empiric antimicrobial therapy was required in 23% of cases. There was a 9% reduction in the treatment failure rate in the pharmacist driven follow-up group versus standard of care culture follow-up group (p=0.0351). Drug-bug mismatch was significantly reduced by over 7% (p<0.0001). 14-day revisit to ED or Trinity Clinic was reduced by 5% (p=0.25).

CONCLUSION: Pharmacist intervention in a culture follow-up program may significantly reduce urinary tract infection treatment failure rates.

X-5
NEPHROTOXICITY ASSOCIATED WITH CONCOMITANT VANCOMYCIN AND STANDARD VERSUS EXTENDED INFUSION PIPERACILLIN-TAZOBACTAM IN OBES patients. Justin Horowitz, Steven Knight, Matthew Crotty, Chester Nguyen, Methodist Dallas Medical Center, Dallas, Texas.

PURPOSE: Prior to bacterial identification, empiric antibiotic therapy with vancomycin and piperacillin-tazobactam is often used for broad-spectrum coverage. Researchers have alluded to improved pharmacodynamic activity, clinical outcomes, and reduced costs by extending the infusion time of piperacillin-tazobactam from 30 minutes to four hours. Over the past two years there has been discussion in the literature of a potential synergistic nephrotoxicity using this antibiotic combination. Many of these publications do not identify which infusion duration was used. Therefore, it is prudent to identify whether the infusion rate of piperacillin-tazobactam may mitigate this synergistic adverse effect with vancomycin.

METHODS: Approval from the Institutional Review Board was obtained prior to initiation of this single-center, retrospective chart review. Electronic medical records were accessed to identify patients who received vancomycin concomitantly with piperacillin-tazobactam from September 2013 through August 2015. Patients were included if they received this antibiotic combination for a minimum of 48 hours, a body mass index ≥30 kg/m2, and had a baseline serum creatinine (SCR) within 24 hours of antibiotic initiation. Any patient with history of chronic kidney disease or creatinine clearance less than 30 mL/min, structural kidney disease, admitted to a critical care unit, or receipt of both infusion rates of piperacillin-tazobactam were excluded. Comparator arms both include vancomycin, however one group received piperacillin-tazobactam administered over 30 minutes as compared to the other receiving a four hour infusion. The primary outcome is incidence rate of acute kidney injury (AKI) defined as an increase in SCR by 0.5 mg/dL or 50% from baseline. Secondary outcomes include time to AKI, and identification of contributing risk factors.

RESULTS: A preliminary interim analysis was performed after 84 patients were collected. A total of 37 patients were male (44%), mean age was 56 years old, and mean body mass index (BMI) was 39.2 kg/m². The most common indication for antibiotic therapy included skin and soft tissue infections 30 (36%) and respiratory tract infections 30 (36%). The average total daily dose of vancomycin was 2.4 grams. The average total daily dose of standard infusion piperacillin-tazobactam was 14.5 grams, whereas the average total daily dose for extended infusion was 11.5 grams. For the primary outcome, a total of 15 patients in the standard piperacillin-tazobactam infusion arm and 11 patients in the extended infusion arm experienced an AKI, 36% and 26% respectively (p = 0.34).

CONCLUSION: Although there was no statistically significant difference in the incidence of AKI in patients...
receiving concomitant vancomycin and standard versus extended infusion piperacillin-tazobactam, there was a trend toward lower rates with the extended infusion. More patients will be collected to appropriately power this study and determine if there truly is a negligible difference. Furthermore, randomized, prospective studies may further assist clinicians in reducing adverse events associated with this antibiotic combination.

X-6
RETROSPECTIVE REVIEW OF VANCOMYCIN DOSING IN OBSESE PATIENTS IN THE EMERGENCY DEPARTMENT. Travis Smith, Kristi Traugott, Bryson Duhon, Darrel Hughes. Department of Pharmacy, University Health System, San Antonio, TX; Pharmacotherapy Division, College of Pharmacy, The University of Texas at Austin, Austin, TX; Pharmacotherapy Education & Research Center, University of Texas Health Science Center at San Antonio, San Antonio, TX.

Background- Recent pharmacokinetic studies have suggested that obese patients may require larger doses of vancomycin to achieve target troughs in the range of 10-20 mcg/mL at steady state. Appropriate weight based daily dose of vancomycin has not been thoroughly elucidated in an obese patient population.

Objective- The primary objective of this study was to determine whether daily weight based doses of vancomycin ≥30mg/kg/day resulted in therapeutic trough attainment of 10-20 mcg/mL in obese patients more often than doses <30mg/kg/day.

Methods- A single center chart review of patients with a BMI ≥30 kg/m² presenting to the emergency department between July 2011 and July 2015 was conducted. Patients were excluded if they were pregnant, incarcerated, received only one dose of vancomycin, received continuous infusion vancomycin, or had a creatinine clearance <50 mL/min. Patients who received ≥30mg/kg/d of vancomycin were considered to have received high dose therapy, and those who received <30mg/kg/d of vancomycin were considered to have received low dose therapy. Patient demographics, vancomycin doses, concomitant nephrotoxins and vancomycin troughs were recorded.

Results- Two hundred and eighty two patients were identified as obese and receiving vancomycin in the emergency department. After exclusion, forty-nine patients were left for analysis with twenty-four allotted to the high dose group and twenty-five in the low dose group. The average weight and BMI of the patients analyzed was 108kg and 38.2 kg/m², respectively. Skin soft tissue infection (SSTI) was the most common indication for vancomycin (87.8%), followed by respiratory infection (4.1%). Mean trough level at steady state was 15.6 ± 6.8 and 12.1 ± 7.0 mcg/mL for the high and low dose group respectively, p value = 0.07. Overall attainment of target trough concentration was 58.3% (14/24) in the high dose group vs 44% (11/25) in the low dose group (p=0.4). There was no significant difference in rates of acute kidney injury between groups.

Conclusion- Vancomycin dosing of ≥30mg/kg/day resulted in proportionally higher rates of trough attainment, however this difference was not statistically significant. The limited sample size limits the ability to draw conclusions from this study. Future studies adequately powered to detect a difference in rates of trough attainment are needed.

X-7
RECURRENT CLOSTRIDIUM DIFFICILE INFECTION IN PATIENTS WITH CONTINUED PROTON PUMP INHIBITOR THERAPY. Angela Perhac, Kelsey Trimble, Victoria Miller. University Health Shreveport, LA.

Purpose: Proton pump inhibitors (PPI’s) have been linked to increased risk for Clostridium difficile infection, which is the leading cause of infectious diarrhea in the hospital. There are limited options for the treatment of C. difficile and recurrence is common, with up to 20% of patients getting recurrent infections. The primary objective of this study is to determine whether the incidence of recurrent C. difficile infections is higher in those patients who are continued on PPI therapy once diagnosed with the first occurrence.

Methods: This study will be a single-center, retrospective, cohort study. A recurrence of C. difficile infection will be defined as a positive C. difficile test 15-90 days after first incidence of infection. Continued PPI use will be defined as any patient currently on, or with a PPI prescription valid for 90 days following the initial diagnosis of C. difficile infection. Data to be collected from patient charts includes the following: age, sex, date of initial diagnosis, length of hospital stay (in days), initial treatment of C. difficile infection (regimen and dates), antibiotic use between the time of initial diagnosis and recurrence, patient co-morbidities, resolution of symptoms (diarrhea) after initial treatment, PPI use, indication for PPI, lab results for C. difficile testing, date of re-admission with recurrent C. difficile, and date of death (if applicable). The secondary objectives of the study are to determine whether continued PPI use during acute C. difficile infection increases length of hospital stay, and to look at what percentage of patients are on chronic PPI therapy without a clear indication.

Results: In process.

Conclusion: To be determined.

X-8
IMPACT OF AN ANTIMICROBIAL STEWARDSHIP PROGRAM ON DISCONTINUATION OF EMPERIC ANTI-MRSA THERAPY. Stephanie Chang, Kellee Brown, Lauren Linder, Jessica Clark, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

PURPOSE: To evaluate the impact of a pharmacist-run antimicrobial stewardship program (ASP) on MRSA therapy quantified by days of therapy and length of stay at a community teaching hospital.

METHODS: Using data retrospectively collected from the institution’s electronic records, we compared a two-month historic control period to a two-month period after implementation of the pharmacist-run ASP. The study population included adult patients in the general medicine units that receive any one or combination of the following broad spectrum anti-MRSA agents: vancomycin, linezolid, daptomycin, tigecycline, and ceftaroline for at least 48 hours. The baseline data collected included patient age, gender, anti-MRSA agent, antibiotic allergies, infectious disease diagnosis, length of stay, days of therapy, MRSA risk factors, and time culture collected with respect to
antibiotic initiation. The groups were analyzed for differences in length of stay and days of therapy, pre and post implementation of the ASP.

RESULTS: The research is still in progress and results will be provided at the meeting.

CONCLUSION: The research is still in progress and conclusions will be provided at the meeting.

X-9
TIMING OF ANTIBIOTICS AND ITS EFFECT ON HOSPITAL LENGTH OF STAY IN PATIENTS WITH FEBRILE NEUTROPENIA. Johannesmeyer HJ, Jean G, Seifert CF, Texas Tech University Health Sciences Center – School of Pharmacy.

Background: Febrile neutropenia is an oncologic emergency associated with significant morbidity and mortality. At current there is not a consensus between guideline sets on febrile neutropenia with regards to first dose timing cutoffs. The purpose of this study was to identify a relationship between time to first antibiotics and patient outcomes including hospital length of stay in febrile neutropenia.

Methods: A retrospective chart review was performed analyzing patients that were admitted to University Medical Center in Lubbock, Texas from November 1st, 2010 to November 1st, 2015 who either had febrile neutropenia upon admission or developed febrile neutropenia over the course of their hospitalization. Times of admission, antibiotic ordering, and antibiotic administration were collected. The differences between these times were then compared to patient outcomes including hospital length of stay, need for admission to an intensive care unit, and in hospital mortality.

Results: Data collection in progress.

Conclusion: Data collection in progress.

X-10
EVALUATION OF PHYSICIAN PRESCRIBING PATTERNS FOR ANTIBIOTICS IN THE TREATMENT OF CELLULITIS. Michael Ezebuenyi, Fatima Brakta, Ifeanyi Onor, Daniel Sarpong, Kendrea Bryant-Burks, Julio Figueroa II., Xavier University of Louisiana College of Pharmacy/ University Medical Center, New Orleans, LA.

PURPOSE: Skin and soft tissue infections (SSTI) cause about 15 million cases of infection resulting in over 869,000 annual hospitalizations in the United States. Cellulitis accounts for 63 percent of all patients hospitalized with SSTIs between 2009 – 2011. Hospitalized SSTI patients tend to have a longer hospital stay. The primary objective of this study is to evaluate physician adherence rate to evidence-based practice guidelines. Secondary objectives include evaluating antibiotic selection preferences, duration of therapy, readmission rates and cost of hospitalization. The goal of the project is to generate data to inform the development of hospital based protocol for cellulitis treatment.

METHODS: This study is a single-center, retrospective, electronic chart review of patients admitted to the hospital for cellulitis based on the ICD-9 codes of 680 – 682.9. The study has been approved by both the Xavier University of Louisiana and Louisiana State University Institutional Review Boards (IRB) respectively. The following data will be collected: age, sex, race, site of infection, microbiological and culture sensitivity results, length of stay, antibiotics and length of therapy, cost of care, re-admission rate (14 days and 30 days), causative pathogen, primary service at admission, penicillin allergy. Comorbidity data will be collected on the following population: Diabetes patients, IV drug users, MRSA infection, patients with recent surgery (surgery in less than or equal to 1 month), prior history of cellulitis, peripheral artery disease, and peripheral vascular disease. All patients aged 18 years and older with ICD-9 Codes of 680 – 682.9 for cellulitis admission will be included. Patients younger than 18 years old and patients without ICD-9 codes of 680 – 682.9 will be excluded. To maintain confidentiality, collected data will be recorded without patient identifiers. Descriptive statistical analyses and correlation/regression analyses will be performed.

RESULT: Pending

CONCLUSION: Pending

X-11
EFFECTS ON ANTIBIOTIC PRESCRIBING RATES AFTER PHYSICIAN AND NURSE EDUCATION ON UPPER RESPIRATORY INFECTIONS. Chantal Kneifel, Jenna Kubena, Shamama Burney, Tyson Kubena, West Texas Veterans Affairs Health Care System, Big Spring, TX.

PURPOSE: The majority of upper respiratory infections are viral in origin and are often inappropriately treated with antibiotics. Overuse of antibiotics contributes to antibiotic-resistance, increased healthcare costs, and increased risk of adverse events. The primary objective of this study is to determine the difference in prescribing rate of antibiotics after provider and nurse education on the appropriate use of antibiotics for upper respiratory infections at the West Texas Veterans Affairs Health Care System in Abilene during December 2015 through February 2016 compared to the previous year. The secondary objectives are to determine the percent of reported antibiotic adverse drug reactions and the difference in antibiotic prescribing rates before and after a previously implemented emergency prescription program at the Abilene primary care clinic during February 2015 compared to March 2015.

METHODS: This quality improvement study was approved by the Pharmacy and Therapeutics Committee. Resident-driven education was delivered to nurses and providers during a live in-service presentation on the treatment guidelines for acute respiratory infections. In addition, they were provided treatment algorithms and mock prescription pads from CDC Get Smart for patient distribution, summarizing symptomatic treatment and when antibiotics are indicated. Antibiotic prescribing rates will be determined from the data collected before and after the training. The electronic medical record will be utilized to identify patients who received an antibiotic, the dose prescribed, the issue date, the RX number, the provider, and the patient. Protected health information (PHI) to be collected includes the patient’s name and social security number, which will be maintained confidentially and de-identified upon analysis. Patients will be included if they are prescribed one of the following oral antibiotics: beta lactam, clindamycin, fluoroquinolone, linezolid, macrolide, sulfamethoxazole/trimethoprim, or tetracycline. Patients...
will be excluded if antibiotic prescriptions are written for more than 21 days duration, prescribed for skin infections, urinary tract infections, *Helicobacter pylori* infections, or sexually transmitted infections, or if any of the following antibiotics are prescribed: azithromycin 600 mg, metronidazole, nitrofurantoin, and rifampin.

**PRELIMINARY DATA:** At baseline, the total number of prescriptions that were written for antibiotics between December 2014 and February 2015 was 158 prescriptions. The number of antibiotic prescriptions based on provider team was 68, 26, and 64 for team 1, team 2, and team 3 respectively. Post-intervention data and conclusions will be presented at the THSP Alcaldé Southwest Leadership Conference in April 2016.

**X-12**

**EVALUATING THE EFFICACY AND SAFETY OF PROBIOTICS FOR PRIMARY PREVENTION OF NOSOCOMIAL CLOSTRIDIUM DIFFICILE INFECTION (CDI).** Morgan Odom, Laura Nelson, INTEGRIS Baptist Medical Center, Oklahoma City, OK.

**PURPOSE:** To assess the efficacy and safety of probiotic use in primary prevention of nosocomial CDI based on current practices used within a tertiary hospital.

**METHODS:** Clinical and demographic data were retrospectively collected using electronic medical records to determine if patients met well-defined criteria for nosocomial CDI from the time period December 6, 2011 to December 28, 2013. Diagnostic criteria for nosocomial CDI was set by the Clinical Practice Guidelines for *Clostridium difficile* Infection in Adults: 2010 Update by the Society for Healthcare Epidemiology of America (SHEA) and the Infectious Diseases Society of America (IDSA). Evidence of nosocomial CDI diagnoses based on PCR methods was confirmed utilizing objective laboratory data within the electronic medical record. Records were further inspected ensuring patient exposure to an antibiotic occurred regardless of preventative probiotic use. In consideration of primary prevention, a probiotic must have been administered within 48 hours from the time of first antibiotic administration.

**RESULTS:** In progress.

**CONCLUSION:** In progress.

**X-13**

**DETERMINATION OF SUSCEPTIBILITY OF PSEUDOMONAS AERUGINOSA AND EXTENDED SPECTRUM BETA-LACTAMASE ENTEROBACTERIAEAE BACTERIAL ISOLATES TO CEFTAZIDIME/AVIBACTAM AS COMPARED TO CEFTAZIDIME: AN INTERNAL MIC DISTRIBUTION STUDY.** Katrina Keith, Greg Perry, Young Lee, Hendrick Medical Center/Texas Tech Health Sciences Center, Abilene, TX.

**PURPOSE:** Increasing rates of antimicrobial resistance combined with indiscriminate use of antibiotics, lack of antibiotic development and increasingly large and connected populations have the potential to create widespread epidemics. With new antimicrobial development still in the pipeline and increasing antimicrobial resistance, drug companies are developing compounds that extend the activity of already existing antibiotics. Ceftazidime/avibactam is the combination of existing antimicrobial combined with a novel beta-lactamase inhibitor. The goal of this study is to determine the MIC50 and MIC90 of bacterial isolates collected. This will be used to determine the bacterial isolates susceptibility to ceftazidime/avibactam as compared to ceftazidime alone.

**METHODS:** Systemic and urine specimens will be collected for organism identification. The microbiology lab at Hendrick Medical Center will provide information regarding organism identification. Organisms identified as *Pseudomonas aeruginosa* or an ESBL-producing *Enterobacteriaceae* species will be saved and included in the analysis. Specimens will undergo a McFarland dilution and plated on agar plates in preparation for MIC determination. E test strips containing ceftazidime/avibactam and ceftazidime alone will be placed side-by-side to determine minimum inhibitory concentration (MIC) of the isolate. Plates will be reviewed 20-24 hours post incubation to determine MIC. MIC is defined as the edge of the inhibition ellipse where it intersects the side of the strip. Susceptibility breakpoints provided by the FDA and CLSI will be used to determine whether an isolate is sensitive, intermediate, or resistant. The percent susceptible versus not susceptible overall for each pathogen will then be reported. MIC50 and MIC90 will be determined for ceftazidime/avibactam and ceftazidime and used to facilitate agent-agent and agent-species susceptibility comparisons. **RESULTS:** Data collection has resulted 62 samples consisting of ESBL *enterobacteriaceae* and *Pseudomonas aeruginosa* to date. Results will be calculated once 80 samples are achieved. **CONCLUSION:** Pending completion of data collection and analysis of results.
RESULTS: Preliminary results have been collected on 4 patients. Data collection is on-going Analysis in progress and results pending.
CONCLUSION: Pending.

X-15
EVALUATING GLYCEMIC CONTROL FOR PATIENT-ALIGNED CARE TEAM CLINICAL PHARMACY SPECIALISTS AT THE MICHAEL E. DEBAKEY VETERANS AFFAIRS MEDICAL CENTER. Jessica Gardea, James Papadatos, Richard Cadle, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

BACKGROUND: Management of diabetes mellitus (DM) remains a challenge in the US, as almost half of patients with diabetes are uncontrolled with a hemoglobin A1c (HbA1c) >7.0%. Over the last decade there has been increasing evidence supporting the integration of Clinical Pharmacy Specialists (CPS) to multidisciplinary medical teams which have demonstrated improved glyemic control and better clinical outcomes in the primary care setting.
OBJECTIVES: The primary objective of this study will be to evaluate the change in HbA1c levels in patients with diabetes followed by a CPS at the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC) in Houston, Texas. The secondary objectives of this study are to evaluate the percent of patients who reach American Diabetes Association (ADA) goal HbA1c (<7.0%) by study conclusion and evaluate documentation of hypoglycemic events in progress notes.
METHODS: A retrospective chart review evaluating glycemic control will be conducted on patients with DM managed by a CPS. Patients with a diagnosis of Type 1 or Type 2 DM who have a baseline HbA1c ≥9.0% and have at least three CPS visits over twelve months will be included in this study. Patients with cognitive impairment as documented by ICD-9 codes or have less than three CPS visits over twelve months will be excluded. Data collected at baseline will include age, gender, ethnicity, body mass index, HbA1c level, co-morbidities including hypertension, hyperlipidemia, coronary artery disease, heart failure, and chronic kidney disease, initial CPS visit, and diabetes oral and injectable medications. Data to be collected during treatment period will include HbA1c levels, any additional diabetes oral and injectable medications, number of pharmacy, primary care and/or endocrine visits, and documentation of any hypoglycemic events in progress notes or hospitalizations related to hypo/hyperglycemia. Descriptive statistics will be used to analyze baseline characteristics and medication use. Paired t-test will be used to measure change in glycemic control and chi-squared test will be used to compare the proportion of patients reaching ADA goal HbA1c of <7.0%.
RESULTS: In progress

X-16
EFFECT OF VISIT FREQUENCY OF PHARMACIST-LED MEDICATION MANAGEMENT PROGRAM (MMP) VISITS ON DIABETES CLINICAL OUTCOMES. Amy Frederick, Joyce Juan, and Delaney Ivy, Baylor Scott & White Health, Temple, Texas.

PURPOSE: Studies have been published on the positive effect of pharmacists’ role in chronic disease state management. Few studies have looked at the effect that increased or decreased visit frequency may have on diabetes clinical biomarkers such as hemoglobin A1c, blood pressure readings, and lipids. As most primary care provider (PCP) visits are conducted once a year or every 6 months, pharmacists are in a key position to see patients and manage their diabetic therapy in between PCP visits. The purpose of this study is to determine if a decrease in face-to-face diabetic visit frequency with pharmacists will negatively impact clinical outcomes.
METHODS: This retrospective study has been approved by the Institutional Review Board. Under the diabetic medication management program (MMP) at Baylor Scott and White Health, patients were seen monthly by pharmacists until early 2015, when time between visits was lengthened to every 3 months. The primary outcome of this study will be to determine the percent change in clinical outcomes of hemoglobin A1c, systolic and diastolic blood pressure, total cholesterol and its components (triglycerides, low-density lipoprotein, and high-density lipoprotein). Secondary outcomes are to evaluate clinical outcomes based on mean percent change, the classes of diabetic agents used, the number of diabetic agents on board, and the change in frequency of emergency room and hospital admissions. To be eligible, patients must have at least 6 MMP visits within a 14-month period prior to and at least 2 visits in a 12-month period after February 1, 2015. De-identified patient data will be collected from electronic medical records 14 months prior to and after the change in visit frequency. The diabetic MMP patient population will serve as its own control.
RESULTS: N/A
CONCLUSIONS: N/A

X-17
COMPARISON OF A MULTI-MODAL BLOOD GLUCOSE CONTROL PLAN IN DIABETIC OPEN VASCULAR SURGERY PATIENTS. Meghan Thibeaux, Malar Narayanan, Johanna Higgins Clowney, Elaine Presutti, Spencer Mauro, Memorial Hermann Southwest Hospital, Houston, TX.

BACKGROUND: Hyperglycemia in diabetic open vascular surgery patients is associated with increased hospital length of stay, infection, morbidity and mortality. Current guidelines recommend a blood glucose goal less than 180 mg/dL in hospitalized patients to decrease hyperglycemic complications without causing severe hypoglycemic events. However, there is no recommendation regarding how to achieve the target blood glucose goal. The purpose of this study is to compare the efficacy and safety of a multi-modal blood glucose control
plan before and after initiation in diabetic open-vascular surgery patients from admission to discharge.

**METHODS:** This is a retrospective chart review conducted at a 568 bed community hospital from July 2013 to July 2015. Data was collected one year before (July 2013 to July 2014) and one year after (July 2014 to July 2015) the initiation of a multi-modal blood glucose control plan. The blood glucose control plan was designed to achieve blood glucose levels less than 180 mg/dL in diabetics during the preoperative, intraoperative, and postoperative stages of open vascular surgery. Inclusion criteria consists of patients who are not pregnant, aged 18 years or older, undergoing open vascular surgery, and either have documented diabetes or an A1C greater than or equal to 6.5 percent at admission. The primary endpoint of this study is the hyperglycemic rate based on documented blood glucose levels greater than or equal to 180 mg/dL.

The secondary endpoints include hospital mortality from any cause, length of hospital stay, hypoglycemic rates, and surgical site infection rates.

**RESULTS:**

**CONCLUSION:** Research in progress

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**X-18**

**A COMPARISON OF CLINICAL OUTCOMES FOR TWICE DAILY ADMINISTRATION OF INSULIN DETEMIR AND INSULIN GLARGINE.** Lisa Nguyen, Krystal Edwards, Kevin Kelly, Karen George, Stephanie Okorodudu, Ryan Hadley, Texas Tech University Health Sciences Center School of Pharmacy and Veterans Affairs North Texas Health Care System, Dallas, TX.

**BACKGROUND:** The Centers for Disease Control and Prevention (CDC) reports that 21 million people in the U.S have been diagnosed with diabetes mellitus (DM) and 8.1 million people are undiagnosed diabetics. Among patients diagnosed with DM, about 71.6% patients are using insulin alone or in combination with at least one oral hypoglycemic medication. This prevalence is even greater within the Veterans Health Administration (VHA) system. Appropriate use of insulin can directly affect the patient’s glycemic outcomes, typically reflected in hemoglobin A1c values. Long acting insulins, such as detemir and glargine, can be used for effective basal glucose control; however, because of their delayed onset of action, they do not target post prandial glucose fluctuations. Detemir and glargine are regularly prescribed as once daily injection, howev

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**X-19**

**IMPACT OF PHARMACIST LED DIABETIC EDUCATION ON 30-DAY READMISSION RATES.**

Kathleen Ubina, Betina Daniel, Binal Patel, Methodist Dallas Medical Center, Dallas, TX.

**PURPOSE:** The purpose of the study is to evaluate the frequency of 30-day all-cause readmissions in diabetic patients at Methodist Dallas Medical Center after implementation of a pharmacy-led diabetic education service. Diabetic education has primarily been provided by nursing staff.

**METHODS:** 30-day all-cause readmission rates following initiation of pharmacy-led diabetic education was compared to retrospective data collected from electronic health records of patients who received nursing-led diabetic education within the past year. Patients were included in the study if they were ≥ 18 years of age, new or prior history of diabetes mellitus type II, admission or transfer to a general medicine unit, and an inpatient diabetic education order from a physician. Those who were pregnant, discharged to a long-term care or skilled-nursing facility or against medical advice were excluded.

**RESULTS:** An interim analysis of 45 patients was conducted. The majority of patients who received diabetic education had a prior history of diabetes (93.3%), mean HbA1C of 9.58, and mean BMI of 34.58 kg/m². Pharmacy-led diabetic education had a significantly lower rate of 30-day all-cause readmissions compared to nursing-led diabetic education, 0% vs 20% respectively (p<0.03). Of the 5 readmissions, 40% were due to diabetic related complications.

**CONCLUSION:** Based on the interim data, pharmacy-led diabetic teaching can improve 30-day all-cause readmission rates. More patients will be collected to appropriately power the study and determine if a pharmacy-led service can truly impact readmission.
XI-1
EVALUATION OF EMPIRIC ANTIBIOTIC THERAPY FOR UROSEPSIS IN SPINAL CORD INJURY PATIENTS AT A VETERANS AFFAIRS INSTITUTION. Bryan K. Sackey, Regina A. Issac, Feibi Chi, Michael E. DeBakey Veterans Affairs Medical Center.

PURPOSE: To evaluate the temporal and qualitative relationships between empiric antibiotic therapy in spinal cord injury (SCI) patients with urosepsis and their clinical outcomes. Patients with SCI represent a specialized population with an elevated risk for urinary tract infections and subsequent complications due to neurogenic bladder dysfunction. Urinary analysis of SCI patients suggests that there is a higher incidence of polymicrobial infections and multi-drug resistant organisms (MDROs). Additionally, conventional antimicrobial dosing methods may be inappropriate in SCI patients due to an overestimation of renal function (based on decreased muscle mass in this population).

METHODS: Using the institution’s computerized patient record system (CPRS), data was retrospectively collected to determine if an increased time to first dose of empiric antibiotic therapy was associated with worsened clinical outcomes in eligible SCI patients (defined as patient decompensation 24 hours post first antibiotic dose). MIC data using Vitek 2 was also collected to determine susceptibility patterns of common etiological microorganisms during episodes of urosepsis in SCI patients.

RESULTS: An interim analysis of 27 patients was conducted. Majority of the patients were quadriplegic (59.25%), with a mean age of 63.2 (SD ±9.5) and a mean Charlson Comorbidity Index score of 5.71 (SD ± 2.78). The median time to first dose of antibiotic upon diagnosis of urosepsis was 160 minutes. Patients who decompensated had a significantly higher median time (hours) to first dose antibiotics (3.95 vs. 2.25, p=0.043). The most common pathogens in our study population were *proteus* (29%), *escherichia coli* (20%), *enterococcus sp.* (16%), and *klebsiella sp.* (14%). For *proteus*, MIC data revealed a lower susceptibility to ampicillin/sulbactam (p= 0.0168), cefazolin (p=0.025), ceftizoxime (p=0.0257), and imipenem (p=0.044) than the institution’s general population. *Klebsiella sp.* revealed a significantly lower susceptibility to carbapenems (imipenem, ertapenem) in our study population (p= 0.012) compared to the institution’s general population. A higher proportion of patients that were not transferred to higher level of care decompensated (50% vs 20%, p=0.349). Majority of the patients (45%) who initiated vancomycin as part of their empiric antibiotic regimen had a supratherapeutic trough (>20 mg/L) level after achieving steady state.

CONCLUSION: Based on the interim data, an increase in time to first dose of antibiotic in SCI patients with urosepsis is associated with worsened outcomes. SCI patients showed a decreased susceptibility to many commonly employed empiric antibiotics for urosepsis including ampicillin, cefazolin, and carbapenems based on the most common etiological pathogens.

XI-2
INFECTION RELATED READMISSION FOLLOWING TRAUMATIC SPLENIC INJURY. Samie Sabet, Shwana King. Texas Tech University Health Sciences Center, School of Pharmacy, Amarillo, TX.

BACKGROUND: The immunologic and anatomic integrity of the spleen have been proven to be important defense mechanisms against certain infections. Distortion of the anatomy in patients with splenic injury may contribute to an increased risk of infection during the period of recovery. The increased risk of severe sepsis in splenectomized patients has been well studied over the years. Prophylactic treatments such as vaccines and antibiotics during the first two weeks after splenectomy are targeted to prevent *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Neisseria meningitidis* infections. However, existing literature on immunization of patients following non-operative management of splenic injury is incongruous.

PURPOSE: To determine if there is a higher readmission rate secondary to infections among trauma patients with splenic preservation following injury compared to those with non-injured spleens. A higher rate of infections in the patients with preserved injured spleens may support additional efforts dedicated to the development of protocols that aim to limit infectious risks in this patient population.

METHODS: Patients aged 18 or older admitted to the Northwest Texas Healthcare System (NWTHS) level III trauma center from May 2013 to November 2015 are screened for inclusion in this retrospective study. Patients with a splenectomy are excluded from the study. Using data collected from NWTHS electronic records, we will compare the readmission rate for trauma patients with splenic preservation following injury against trauma patients with non-injured spleens.

RESULTS: The study is currently in progress.

XI-3
EFFECTIVENESS OF A PHARMACY TO DOSE VANCOMYCIN CONSULT SERVICE IN ATTAINING THERAPEUTIC TROUGH LEVELS IN A TEACHING HOSPITAL. Ellen Robinson, Stephanie Younts, Daniel Gonzalez, Darrel Hughes, Kristi Traugott, Department of Pharmacy, University Hospital, University of Texas Health Science Center, San Antonio, Texas.

BACKGROUND: Previous literature indicates pharmacy to dose consult services leads to reductions in Medicare charges, drug and laboratory costs, medication errors, and patient hospital days with insignificant delays in antimicrobial therapy. Additionally, hospitals without pharmacist managed drug therapy programs have higher death rates and require more time to care for their patients.

OBJECTIVE: Determine if implementation of a pharmacy to dose vancomycin consult service improves therapeutic trough attainment and improve appropriate lab draws without delaying antibiotic therapy.

METHODS: Analyzed therapeutic trough attainment, appropriate trough draws, adverse renal effects, and appropriate during vancomycin therapy through retrospectively collected data from institutions’ electronic records before and after implementation of a pharmacy to dose consult service.
RESULTS: There were 63 patients included in the pre-pharmacy dosing group and 25 patients included in the pharmacy dosing group. In the pre-pharmacy dosing group, 17 of 63 patients (27%) achieved therapeutic levels on the first trough vs. 12 of 25 patients (48%) in the pharmacy dosing group (p = 0.08). Three patients (4.8%) in the pre-pharmacy group experienced an increase in serum creatinine > 0.3 mg/dL in 48 hours while none was documented in the pharmacy group (p=0.56). The average number of troughs drawn per vancomycin course in both groups was 2. Vancomycin troughs were drawn appropriately 60% of the time in the pre-pharmacy group and 96.5% of the time in the post-pharmacy group (p=0.001). The time from initial consult to medication order entry was less than 60 minutes in 84% of patients post implementation of consult service.

CONCLUSION: Implementation of a pharmacy to dose vancomycin consult service resulted in an increased percentage of initial therapeutic trough attainment although it did not reach statistical significance. Failure to reach significance could be related to small sample size. Pharmacy-managed vancomycin therapy resulted in a significant improvement of appropriate lab draws.

XI-4
EVALUATION OF A PHARMACIST MANAGED VANCOMYCIN DOSING PROTOCOL IN HEMODIALYSIS PATIENTS AT A TEACHING TERTIARY CARE FACILITY. Kerry Anne Rambaran, Kristen Fuhrmann, Charles F. Seifert, Texas Tech University School of Pharmacy and University Medical Center, Lubbock, TX.

PURPOSE: According to the USRDS 2014 annual report, "over 90 percent of new patient (98,954) began end stage renal disease (ESRD) therapy with hemodialysis (HD)* and since 1993, hospitalization due to infection in HD patients rose by 34 percent. Infection, often related to vascular access is one of the major contributors to HD patient morbidity and mortality, accounting for 9.5 to 36 percent of deaths. Vascular access infections (most commonly found in patients utilizing dialysis catheters) are reported to be the source in up to 48 to 73% of all bacteremias in HD patients. As such, antibiotic use in HD patients is not uncommon, particularly vancomycin, as it provides coverage against gram positive organisms inclusive of Staphilococcus and Streptococcus. The aim of this study was to evaluate the effect of a pharmacist managed vancomycin dosing protocol in hemodialysis patients two years before versus three years after its implementation on outcomes including therapeutic levels, dosing and mortality at the University Medical Center (UMC) in Lubbock.

METHODS: Using data retrospectively collected from UMC’s electronic records, we compared the effect of a pharmacist managed vancomycin dosing protocol in hemodialysis patients two years before versus three years after its implementation. Patients were aged 18 and older, on hemodialysis and with confirmed bacteremia. Patients were identified using ICD-9 and ICD-10 codes. The outcomes include the percentage of hemodialysis patients that received optimal vancomycin dosing and therapeutic trough levels pre and post dosing protocol implementation as well as if a pharmacist managed vancomycin dosing protocol reduced complications (bacteremia rates, mortality, length of stay, clinical cure rates, therapeutic levels, prevalence of toxicity) and ultimately evaluate if the current protocol is adequate for hemodialysis patients. To examine the predictive factors of mortality, complications and impact of the protocol, multivariable logistic and linear regression models were used respectively.

RESULTS: Data collection in process.

CONCLUSION: Pending

DISCLOSURE: The authors have nothing to disclose.

XI-5
EVALUATION OF EMPIRIC ANTIMICROBIAL THERAPY FOR URINARY TRACT INFECTIONS IN THE EMERGENCY DEPARTMENT. Amrit Sheena, Amy Schilling, Peter Le, Memorial Hermann Hospital System, Houston, TX.

BACKGROUND: According to Infectious Diseases Society of America (IDSA) urinary tract infections (UTIs) account for over 8 million healthcare visits per year in the United States, of which one fifth of these visits are to Emergency Departments (ED) and greater than 100,000 result in hospital admission. Additionally, the increasing incidence of multi-drug resistant organisms (MDROs) has heightened the importance of appropriate empiric antimicrobial therapy selection in the treatment of UTIs. Studies have demonstrated a correlation between patient specific risk factors and MDROs as well as the impact of inappropriate antimicrobial selection on mortality; however limited data exists in appropriate empiric antimicrobial selection for patients diagnosed with UTIs in the ED.

PURPOSE: The purpose of this study is to evaluate the appropriateness of empiric antimicrobial therapy for UTIs in the ED based on susceptibility data, to provide guidance for future management of UTIs.

METHODS: This IRB-approved, retrospective, observational, multicenter study evaluated the appropriateness of empiric antimicrobial therapy in adult patients diagnosed with a UTI in the ED from July 1, 2014 to June 30, 2015 from three community hospitals. Patients were identified by a computer-generated report using International Classification of Diseases, Ninth Revision (ICD-9) codes for UTIs and data was collected from the electronic medical record. Inclusion criteria included patients diagnosed with a UTI in the ED, who were either discharged home from the ED or evaluated in an observation unit for less than 24 hours. Exclusion criteria included pregnant women, patients admitted to the hospital, urosepsis, patients transferred from another acute care hospital, and repeat ED visits by patients within 7 days of initial visit with the same diagnosis. Data collected included, patient characteristics, co-morbidities, laboratory data, UTI symptoms, antimicrobial therapy, microbiology results, and risk factors for MDROs. The primary endpoint of this study was to evaluate the appropriateness of empiric antimicrobial therapy for UTIs diagnosed in the ED. Secondary endpoints include risk factors for MDROs, concordance with IDSA guidelines for UTIs, cost of empiric antimicrobial therapy, and patient disposition following UTI diagnosis.

RESULTS: A total of 5,123 patients who were diagnosed with a UTI in the ED were identified by ICD-9 codes from July 1, 2014 to June 30, 2015. Due to the volume of the patient population identified, the population was narrowed to patients diagnosed with UTI from May 1, 2015 to June 30, 2015, totaling 943 patients. Exclusion criteria were
XI-6
ASSESSING THE RISK OF FAILURE WITH ORAL ANTIBIOTICS FOR THE TREATMENT OF URINARY TRACT INFECTIONS AFTER DISCHARGE IN CHILDREN LESS THAN 24 MONTHS OF AGE. Vijay Nayar, Shannan Eades, Anand Gourishankar, Memorial Hermann - Texas Medical Center, Houston, TX.

PURPOSE: Current pediatric guidelines for the management of urinary tract infection (UTI) do not include enteral antibiotics for infants aged less than 2 months. Despite this, infants are often discharged home to complete a course of enteral antibiotics for UTI without final urine culture results. It is unknown how many require a change in antibiotics after discharge based on bacterial pathogen resistance. The primary purpose of this study is to compare the rates of potential failure with home enteral antibiotics due to bacterial pathogen resistance between infants aged less than 2 months and those aged 2 to 24 months.

METHODS: The electronic medical record was used to retrospectively identify patients aged 7 days to 24 months hospitalized for first UTI. Patients with congenital disorders of the urinary tract or kidneys were excluded. Antimicrobial data was collected to compare bacterial resistance to discharge antibiotics between infants aged less than 2 months and those aged 2 to 24 months. Secondary outcomes included percentage of patients started on appropriate antibiotics in hospital, number of days of enteral or parenteral antibiotics, length of stay for patients receiving parenteral antibiotic therapy alone or parenteral converted to enteral therapy, and percentage of patients discharged on off-label enteral cefdinir.

RESULTS: 512 patients admitted for UTI between January 2011 and August 2015 were screened for inclusion, and 169 were included for the final analysis. An interim analysis of 50 patients was performed. 18 of 24 patients less than 2 months of age were discharged on oral antibiotics, compared to 23 of 26 patients between 2 months to 2 years of age at admission. Enteral discharge antibiotics were appropriate in 94% of patients less than 2 months of age, compared to 87% in the 2 months to 2 years of age group. 42% of the 50 patients were discharged on enteral cefdinir. Further statistical analysis will be performed upon completion of data collection.

CONCLUSION: Pending completion of data collection and statistical analysis

XI-7
POSTOPERATIVE ABDOMINAL ABSCESS RATES IN CHILDREN WITH PERFORATED APPENDICITIS: A DIRECT COMPARISON OF PIPERACILLIN/TAZOBACTAM AND CEFTRIAXONE PLUS METRONIDAZOLE. Molly McNaull, Kathryn Merkel, Dusten Rose, and Carolyn Ragsdale, Seton Healthcare Family, Austin, TX.

PURPOSE: Appendicitis is the most common abdominal condition requiring surgery in children. The Infectious Diseases Society of America recommends all patients with appendicitis receive antimicrobial therapy to prevent complications post-appendectomy, yet the determination of the most optimal empiric regimen remains controversial. Piperacillin/tazobactam (PT) and ceftriaxone plus metronidazole (CM) have each demonstrated comparable outcomes to traditional triple antibiotic therapy for the perioperative management of perforated appendicitis. However, the PT and CM regimens have never been studied in direct comparison. The aim of the present study is to compare outcomes in pediatric patients receiving either PT or CM for perforated appendicitis.

METHODS: An evidence-based practice guideline was implemented at our institution in July 2014 to standardize management of appendicitis. Preoperative antibiotic selection was standardized to two regimens: PT, recommended first-line, and CM as an alternative regimen. The present study is a retrospective chart review of patients less than 21 years of age with perforated appendicitis diagnosed intraoperatively between July 1, 2014 and June 30, 2015 at our institution. In order to be included, patients must have received PT or CM for at least 24 hours post-appendectomy. Exclusion criteria were diagnosis of non-perforated appendicitis, interval appendectomy, or receipt of concomitant antibiotics empirically. The primary outcome is development of intraabdominal abscess within 30 days of appendectomy. Secondary outcomes include length of stay, timeliness of preoperative antibiotic administration, and readmission within 30 days. Measures of timeliness include time from antibiotic order entry to administration and time from administration to the start of operation.

RESULTS: Data collection completed and statistical analysis is currently in progress.

CONCLUSION: Pending final study results.

XI-8
RETROSPECTIVE COMPARISON OF LOW MOLECULAR WEIGHT HEPARIN VS. WARFARIN VS. ORAL XA INHIBITORS FOR THE PREVENTION OF RECURRENT VENOUS THROMBOEMBOLISM IN ONCOLOGY PATIENTS. Saeed K. Alzahrani, Susan E. Seago, Jessica E. Garza, Yasmine F. Hashimie, Kimberly A. Baty, Kathleen G. Halka, Jon D. Herrington, Scott & White Memorial Hospital, Temple, TX.

PURPOSE: Currently, there is increasing evidence indicating that factor Xa inhibitors have the potential to be used as an alternative therapy to warfarin for the prevention of recurrent venous thromboembolism (VTE). However, no studies have compared oral factor Xa inhibitors to low molecular weight heparins to warfarin in the oncology population. The purpose of this study is to evaluate the incidence of recurrent VTE in oncology patients utilizing
METHODS: Using data retrospectively collected from the institution’s electronic records, we compared the incidence of recurrent VTE in oncology patients taking rivaroxaban, enoxaparin, or warfarin with at least 3 months of follow-up. The primary endpoint was the first episode of objectively documented recurrent deep-vein thrombosis, pulmonary embolism, or both at 3 months. Secondary endpoints included major bleeding and mortality. Patients 18 years of age or older, had a documented diagnosis of cancer, a VTE documented in their medical record, and patients taking either warfarin, enoxaparin, or rivaroxaban for at least 75% of the time were included. Patients in or transitioning to hospice, pregnant, patients with known clotting or bleeding disorders, patients receiving systemic fibrinolytic therapy, patients with an inferior vena cava filter, or patients with a mechanical heart valve were excluded.

RESULTS: Risk in progress.

CONCLUSION: Oral XA inhibitors have the potential to prevent recurrent VTE in oncology patients.

XI-9

IMPACT OF TELEHEALTH WARFARIN EDUCATION ON PATIENT RETENTION: A RANDOMIZED CONTROLLED QUALITY IMPROVEMENT STUDY. Krista M. Heinrich, Erin Davidson, Kiara Thomas, Marlena Perry, Amulya Tatachar, Health Texas Providers Network in association with Baylor Scott and White Health Pharmacies Dallas, TX.

PURPOSE: Limited evidence exists on the standardization of warfarin education. Advances in telehealth are proving to be a unique educational strategy that may increase patient knowledge in addition to receptivity and satisfaction. Specifically, use of video technology may play a significant role in increasing patients’ understanding of warfarin therapy and potentially, improve adherence to reduce adverse events and maintain a therapeutic international normalized ratio (INR). The primary objective of this study is to evaluate the effectiveness of a warfarin educational video implemented in a charity outpatient clinic. The secondary objective is to determine patient satisfaction with using an iPad® to deliver warfarin education.

METHODS: A prospective, single-centered, randomized, quality improvement pilot study evaluating patients receiving warfarin therapy. Data collection will be conducted from January 1, 2016 through June 1, 2016. The study population includes indigent patients receiving medical care from an outpatient Baylor Community Care Clinic. Potential study candidates will be identified as patients currently on warfarin therapy with initial and follow up PT/INR visits and meet the study’s inclusion criteria. Data collection includes patient demographics, insurance coverage, highest education level, comorbidities, concomitant medications, indication and duration of warfarin therapy, INR results, INR goal, time in therapeutic range, previous warfarin dose, warfarin dose adjustments (if applicable), adherence, adverse events, diet, pre-video knowledge test scores, and post-video knowledge test scores. Patient consent is required to participate in the study. All patients agreeing to participate in the study will initially complete a warfarin questionnaire to assess patient’s baseline knowledge of warfarin prior to study interventions. Patients will receive an educational video on the iPad® (intervention) and written handout to educate patients about warfarin therapy. Patients will then complete the same warfarin questionnaire immediately after the intervention and immediately prior to the follow-up visit occurring within 60 days of the patient entering the study. A satisfaction survey will be given to all patients at the end of the study. This study has been approved by Investigational Review Board.

RESULTS: Research in progress.

CONCLUSION: iPad® video may serve as a successful tool to educate patients about their warfarin therapy and increase their knowledge of their warfarin therapy.

XI-10

LOW MOLECULAR WEIGHT HEPARINS IN PATIENTS WITH END-STAGE RENAL DISEASE. Bradley G. Burk, Elizabeth Lafitte, Amanda Storer, Kelsey Trimble, Adrian Abreo, University Health, Shreveport, LA.

BACKGROUND: While there are benefits to using low molecular weight heparins (LMWHs) including their ease of administration, lack of frequent monitoring, and high bioavailability, there also exist issues which preclude their use. According the manufacturer’s recommendations, LMWHs such as dalteparin (Fragmin®) and enoxaparin (Lovenox®) should be dose adjusted in patients with creatinine clearance <30 mL/min, and some studies have shown increased bleeding risk in this patient population. Instead, unfractionated heparin is heavily relied upon end-stage renal disease (ESRD) patients, because it doesn’t require dosage adjustment for renal dysfunction. At our hospital, our ESRD patients receive enoxaparin (our current formulary agent, preceded by dalteparin) for deep vein thrombosis (DVT) and pulmonary embolism (PE), prophylaxis and treatment.

PURPOSE: Information on the use of LMWH agents in end-stage renal disease (ESRD) is sparse. The primary objective is to assess the rates of bleeding associated with dalteparin and enoxaparin in ESRD patients. Secondary objectives are to observe and compare rates of thromboembolic events after either prophylactic or therapeutic doses of dalteparin or enoxaparin, as well as the correlation of anti-Xa levels, when available, on bleeding events.

METHODS: This is a single-center, retrospective, IRB-approved study which examines the rates of bleeding in approximately 200 ESRD inpatients on either hemodialysis or peritoneal dialysis after administration of a LMWH (either dalteparin or enoxaparin) for prophylaxis or treatment of thromboembolic events. Exclusion criteria includes pregnant patients, those aged 18 or younger, prisoners, non-ESRD patients, and patients with a history of heparin-induced thrombocytopenia. Two patient lists were generated, one for patients with a diagnosis of ESRD and one for patients administered a LMWH during hospital admission, which were then combined based on the patient’s MRN. Patient data being collected includes age, sex, MRN, weight, height, serum creatinine, BUN, platelet count, INR, hemoglobin, hematocrit, incidence of thromboembolic events (DVT, PE, ischemic stroke), incidence of major bleeds (intracranial, intraocular, retroperitoneal, or a hemoglobin drop of ≥2 g/dL), incidence of minor bleeds (gastrointestinal bleed without hemoglobin drop of ≥2 g/dL, ecchymosis, epistaxis,
XI-11
EVALUATION OF AN INSTITUTIONALLY-APPROVED GUIDELINE FOR THE MANAGEMENT OF ANTICOAGULANTS IN THE PERIOPERATIVE SETTING AT AN ACADEMIC MEDICAL CENTER. Matthew Jarasek, Angel Trieu-Dimaculangan, Kimberly Baty, Emory Martin, Chelsea Krueger, Klayton Ryman, Scott & White Memorial Hospital, Temple, TX.

PURPOSE: For most hospital surgical procedures, anticoagulants are held to reduce intraoperative and postoperative bleeding. The management of anticoagulants in the perioperative setting is challenging because the requirement to hold the anticoagulant must be balanced with the increased risk of thrombosis. Several observational studies have implemented institutional-specific perioperative anticoagulation guidelines and subsequently reported low-rates of thromboembolic and bleeding outcomes. This study will analyze the actual practice of perioperative oral anticoagulant management in comparison with institutionally-approved policies and evaluate the incidence of documented perioperative complications.

METHODS: A retrospective review of adult patients with atrial fibrillation and an active home medication for warfarin, rivaroxaban, or apixaban undergoing inpatient surgical procedures at a 636-bed academic medical center between October 1, 2014 and September 30, 2015 was performed. The following exclusion criteria will apply: patient age less than 18 years, pregnancy, and hemodialysis patients. Data collection will include: patient age, sex, height, weight, race/ethnicity, CHADS2 & CHADS-VASc scores, type of surgery/procedure, anticoagulant used, time of last preoperative dose, time to first postoperative dose, anticoagulation bridging data, perioperative diagnosis of stroke, deep vein thrombosis, and pulmonary embolism, intra- and postoperative diagnosis of major bleed, administration of intra- and postoperative packed red blood cells, international normalized ratio, hemoglobin, platelet count, and serum creatinine. Primary outcomes will include the percentage of patients in which warfarin or factor-Xa inhibitors were preoperatively held and postoperatively resumed accurately according to institutional guidelines. Secondary outcomes will include the rate of documented intra- and postoperative bleeding as well as incidence of stroke, pulmonary embolism, and deep vein thrombosis.

RESULTS: Preliminary results have been collected on 31 patients. Data collection is on-going.

CONCLUSIONS: Pending

XI-12
PREVALENCE OF DRUG-DRUG INTERACTIONS WITH THE NOVEL ORAL ANTICOAGULANTS (NOACs). Rebekka Adamson, Evan Peterson, Tamara Knight, Benjamin King. Seton Healthcare Family, Austin, TX.

PURPOSE: The novel oral anticoagulants (NOACs) have interactions at the P-glycoprotein efflux transporter and/or cytochrome P450-enzyme 3A4, two common interaction sites of many drugs. Many pharmacokinetic drug-drug interactions that may increase thrombosis or bleeding risk have not been adequately studied. Additionally, drug levels and coagulation assays are not routinely monitored or available. For these reasons, the prevalence and importance of these interactions has not been described. The purpose of this retrospective chart review is to determine the prevalence of drug-drug interactions with the novel oral anticoagulants dabigatran, rivaroxaban, and apixaban.

METHODS: Patients will be identified for inclusion to the study through reports generated from a database of patient home medication lists collected upon admission to the Seton Healthcare Family of Hospitals. Any patient 18 years or older and receiving a novel oral anticoagulant (NOAC), dabigatran, rivaroxaban, and apixaban will be included. Pharmacokinetic interactions with dabigatran include inducers and inhibitors of the P-glycoprotein efflux transporter. With rivaroxaban and apixaban, inducers/inhibitors of both the P-glycoprotein efflux transporter and cytochrome P450-enzyme 3A4 will be assessed. Presence of concomitant pharmacodynamic drug interactions, such as aspirin, will be evaluated with all three NOACs. Investigators will identify drug interactions on both medication reconciliation history reports and inpatient medication administration reports. Quantity and characteristics of medication interactions, including pharmacologic category and severity, will be recorded. Additionally, electronic medical record documentation will be screened for any documented evidence of bleeding or thrombotic complications during hospitalization. Subgroup analyses will be performed to identify patient characteristics of those with a medication interaction/s, including age, sex, weight, and creatinine clearance.

RESULTS: To be presented.

CONCLUSION: To be presented.

XI-13
EVALUATION OF HOSPITAL READMISSION RATES OF PATIENTS TREATED WITH RIVAROXABAN VERSUS WARFARIN IN THE TREATMENT OF VENOUS THROMBOEMBOLISM. Nicole O Anidobi, Jodie Gee, Monica Green, Sara Ruppelt, Michael George, Harris Health System, Houston, TX.

PURPOSE: According to the CHEST guidelines, treatment for venous thromboembolism (VTE) requires the use of oral anticoagulants. Warfarin has been the mainstay of anticoagulation until the approval of the novel oral anticoagulants. Rivaroxaban, a direct factor Xa inhibitor approved in 2012 for VTE, is becoming more popular by physicians to treat and prevent VTE in hospitalized patients. The primary objective of this study is to evaluate hospital readmission rates between rivaroxaban and warfarin due to a recurrent VTE event or bleeding related
to antiocoagulation therapy. Secondary objectives will evaluate cost and effectiveness of therapy.

**METHODS:** This study will be a retrospective chart review of patients discharged on rivaroxaban or warfarin from January 1, 2014 to December 31, 2014 for treatment of a VTE. Patients with a previous VTE, already on antiocoagulant therapy prior to study, or have an active malignancy will be excluded from the study. Data collected will include: patient demographics, past medical history, recurrence of VTE events, fatal/non-fatal bleeding events, types of bleeding events, number of follow up visits by a clinical pharmacist and/or primary care physician, reasons for changes from one antiocoagulant (rivaroxaban or warfarin) to the other (if applicable), labs (CBC, PT/INR, comprehensive metabolic panel), and length of hospital stay.

**RESULTS:** A total of 200 patients were evaluated, and 52.5% of the patients were male (n=105), 47.5% were female (n=95). A majority of the patients were African American/Black (n=89, 44.50%). Results pending data collection.

**CONCLUSION:** Pending

**XI-14**
**ASSOCIATION BETWEEN THE INCIDENCE OF VENOUS THROMBOEMBOLISM AND BODY MASS INDEX CLASSIFICATION.** Leigh Gomez, Sophie Samuel, Memorial Hermann-Texas Medical Center, Houston, TX.

**Purpose:** Current evidence speculates that patients with higher than normal body mass index (BMI) have an increased risk of venous thromboembolism (VTE). Few studies have attempted to compare the incidence of VTE in patients with normal BMI to determine whether this increased risk is consistent among all patients, or increases incrementally with increasing BMI. The purpose of this study is to compare the incidence of VTE per BMI category in hospitalized patients deemed overweight, obese class I, obese class II, and obese class III.

**Methods:** This is a single-center, retrospective cohort study of approximately 1453 patients. Data will be further divided in four groups based on BMI scores. BMI classification will be as follows: Overweight (25.0-29.99), obese class I (30.0-34.99), obese class II (35.0-39.99), and obese class III (≥40). Data collection included: age, sex, weight, BMI, significant past medical history, pertinent home medications, admission unit, admission service line, DVT prophylaxis (medication, dose, frequency, average heparin dose, time to first dose, missed or held doses, days on heparin), antiplatelet use during hospitalization, imaging used to confirm VTE, hospital length of stay, and mortality. Patients already on therapeutic antiocoagulation on admission or at any point during the hospitalization for any reason other than current DVT or PE were excluded. The primary endpoint will be to compare the incidence of VTE per BMI category. Secondary endpoints will include length of stay, mortality, and time to first dose of DVT prophylaxis versus time to first diagnosis of VTE.

**Results:** Data collection is complete, and comprehensive data analysis is in progress. Final results will be presented at conference.

**Conclusions:** To be presented at conference.

**XI-15**
**INCIDENCE OF ADVERSE EVENTS WITH FULL DOSE ENOXAPARIN IN MODERATE RENAL IMPAIRMENT.** Stephanie Kuhl, Brian Gubis, Andrea C. Hall, Memorial Hermann – Texas Medical Center, Houston, TX.

**Purpose:** To determine whether bleeding events increase with full dose enoxaparin as renal function declines, resulting in the need for additional dose adjustment, by comparing major bleeding event rates in patients with a creatinine clearance (CrCl) of 30-60 ml/min to patients with a CrCl greater than 60 ml/min.

**METHODS:** Data on adult patients receiving enoxaparin for at least 72 hours from July 2012 through August 2015 was collected from Memorial Hermann – Texas Medical Center’s electronic medical records. Exclusion criteria included CrCl less than 30 ml/min more than once during enoxaparin treatment course, actual body weight less than 45 kg or more than 150 kg, enoxaparin dose alteration of greater than 10% during therapy, co-administration of anticoagulants other than warfarin, and pregnancy. Patients were matched between groups for age greater than 60 years or not and presence or absence of venous thromboembolism (VTE).

**RESULTS:** During the study period, 3346 patients were identified that received enoxaparin, and after applying inclusion and exclusion criteria there were 587 eligible for analysis. After matching on age and presence of VTE there were a total of 150 patients per group. Analysis of baseline characteristics and demographics has been performed. The moderate renal function group had a higher age (median 70 vs. 65; p = 0.001), greater percentage of females (59% vs. 33%; p < 0.001), and more African American patients (50% vs. 26%; p = 0.005) than the normal renal function group. Atrial fibrillation and presence of prosthetic valve were similar in both groups, but there was a higher incidence of pulmonary embolism in the normal renal function group (38% vs. 25%; p = 0.02). Otherwise, past medical history was equal between groups.

**CONCLUSION:** Analysis of bleeding and thrombotic outcomes is pending.

**XI-16**
**ANTICOAGULATION QUALITY ASSESSMENT IN PATIENTS WITH NONVALVULAR ATRIAL FIBRILLATION (NVAF) AND COMPARISON WITH MAJOR TRIALS OF DIRECT-ACTING ORAL ANTICOAGULANTS (DOACs).** Ryan B Shaver, R. Scott Holuby, Thomas C Shank, San Antonio Military Medical Center, San Antonio, TX; Pfizer Inc., San Antonio, TX.

**Purpose:** The benefits of warfarin anticoagulation therapy are strongly correlated with the ability to maintain patients’ INR goal, known as the time in therapeutic range (TTR). TTR is reported as a percentage and there are three commonly used calculation methods (traditional, cross sectional, and Rosendaal). Differences in TTR calculations could alter perceptions about the effectiveness of warfarin therapy.

**METHODS:** At San Antonio Military Medication Center (SAMMC), we conducted a retrospective study to review of medical records. 312 patients with non-valvular atrial fibrillation (NVAF) on warfarin therapy who had an INR goal of 2-3 were identified. TTR was calculated using the
three different methods. The primary end point was difference in calculated TTR in the SAMMC Anticoagulation Clinic (ACC) population.

**RESULTS:** INR data were collected for all warfarin-treated NVAF patients seen in the ACC from 5 Jan to 30 Dec 2015. A total of 5580 INR values for 312 patients were included in the analysis. The mean (SD) for patient-level TTRs using the traditional and Rosendaal methods were 68.5% (66.6-70.4) and 72.4% (70.2-74.6), respectively. Comparing the results using the paired t-test resulted in a significant difference between methods (p < 0.0001). The cross sectional method produced a TTR of 74.4%. All published DOAC trials used the Rosendaal method to measure TTR. The mean (SD) for the Rosendaal TTRs at SAMMC and published in the ENGAGE-AF TIMI trial were 72.4% (19.6) and 64.9% (18.7) respectively; these means were significantly different (p <0.001). Since the SD was not reported for the other three DOAC trials (ARISTOTLE, RE-LY, and ROCKET-AF), comparing the confidence intervals of these trials showed no overlap with SAMMC’s ACC.

**CONCLUSIONS:** For patients treated at SAMMC’s ACC, there was a significant difference between the Rosendaal TTR and traditional TTR and between the traditional TTR and the cross sectional TTR. There was no apparent difference between the cross sectional and Rosendaal TTRs. Although significant differences were seen in two of the three TTR comparisons, this alone does not suggest which method of calculation was most accurate. Each method has strengths and limitations and all three methods should be used to help determine the effectiveness of an ACC. The ENGAGE-AF TIMI has the highest TTR of the DOAC trials and was closest in value to our patient population, yet the TTR was still significantly lower than that calculated for our patients. This raises the question whether the effectiveness of the DOACs in their major trials can be directly compared (i.e., have equal effectiveness) to a patient population with a greater TTR. Further research looking at outcomes in our patients may be warranted. Patients should be thoroughly evaluated for potential benefits, and with an understanding of the generalizability of the DOAC trials, when switching anticoagulation therapy.

**Methods:** A list of patients at the Central Texas Veterans Health Care System taking direct acting oral anticoagulants (DOACs), specifically apixaban, dabigatran, and rivaroxaban as of October 25, 2015 was generated using Microsoft SQL Server 2012 (Microsoft Corp. Seattle, WA) to query Veterans Integrated Service Network (VISN) Data Warehouse (VDW) for patients meeting inclusion criteria. Patients’ adherence rates were assessed using the Medication Possession Ratio (MPR). MPRs were compared amongst the different DOACs and twice-daily dabigatran was compared to the once-daily rivaroxaban.

**Results:** 648 patients from VISN 17 were identified as having an active prescription for a DOAC as of 10/25/2015. 133 patients were prescribed apixaban, 210 rivaroxaban and 305 dabigatran. The average age of the study population was 71 years and the average overall MPR was 89%. The average age of patients prescribed rivaroxaban was 66 years, dabigatran 70, and apixaban 78. The average MPR for apixaban was 90% and both dabigatran and rivaroxaban were 88%. The average MPR of twice-daily DOACs (apixaban and dabigatran) was 89% and the average MPR of the once-daily DOAC (rivaroxaban) was 88%.

**Conclusions:** There was no statistical significant difference between the MPR of any DOAC. There was no statistically significant difference in MPR between once-daily and twice-daily dosing of the DOACs. Twice-daily dosing does not appear to reduce adherence to DOACs at CTVAHS and thus should not be used as the driving factor when deciding which DOAC to prescribe a patient, assuming no other compelling patient specific factor known to influence compliance exists. CTVAHS patients on DOACs are closely monitored by the Anticoagulation Clinic and this could explain the better than average adherence rates at our facility. Future studies could utilize electronic prescription bottles to ensure patient compliance to DOACs.

**XI-17**

**ADHERENCE RATES OF DIRECT ORAL ANTICOAGULANTS (DOACS): COMPARISON OF ONCE-DAILY VERSUS TWICE-DAILY DOING AMONG CENTRAL TEXAS VETERANS HEALTH CARE SYSTEM PATIENTS.** Brendan H. Hogan, Suzanne Fry, Katerine Getchell, Erik Peterson, Central Texas Veterans Health Care System, Department of Veterans Affairs, Temple, TX.

**Purpose:** Adherence is a known issue among patients and has been shown to be inversely proportional to the dosing interval once. Compliance with direct acting oral anticoagulants is essential due to their short half-life, medical indication, and lack of established laboratory monitoring to evaluate efficacy. Dabigatran is the preferred formulary agent at Central Texas Veterans Health Care System. The objective of this project is to determine if there is a statistical difference between adherence rates of direct acting oral anticoagulants given once-daily and twice-daily.

**Methods:** A list of patients at the Central Texas Veterans Health Care System taking direct acting oral anticoagulants (DOACs), specifically apixaban, dabigatran, and rivaroxaban as of October 25th, 2015 was generated using Microsoft SQL Server 2012 (Microsoft Corp. Seattle, WA) to query Veterans Integrated Service Network (VISN) Data Warehouse (VDW) for patients meeting inclusion criteria. Patients’ adherence rates were assessed using the Medication Possession Ratio (MPR). MPRs were compared amongst the different DOACs and twice-daily dabigatran was compared to the once-daily rivaroxaban.

**Results:** 648 patients from VISN 17 were identified as having an active prescription for a DOAC as of 10/25/2015. 133 patients were prescribed apixaban, 210 rivaroxaban and 305 dabigatran. The average age of the study population was 71 years and the average overall MPR was 89%. The average age of patients prescribed rivaroxaban was 66 years, dabigatran 70, and apixaban 78. The average MPR for apixaban was 90% and both dabigatran and rivaroxaban were 88%. The average MPR of twice-daily DOACs (apixaban and dabigatran) was 89% and the average MPR of the once-daily DOAC (rivaroxaban) was 88%.

**Conclusions:** There was no statistical significant difference between the MPR of any DOAC. There was no statistically significant difference in MPR between once-daily and twice-daily dosing of the DOACs. Twice-daily dosing does not appear to reduce adherence to DOACs at CTVAHS and thus should not be used as the driving factor when deciding which DOAC to prescribe a patient, assuming no other compelling patient specific factor known to influence compliance exists. CTVAHS patients on DOACs are closely monitored by the Anticoagulation Clinic and this could explain the better than average adherence rates at our facility. Future studies could utilize electronic prescription bottles to ensure patient compliance to DOACs.

**XI-18**

**DISCORDANCE BETWEEN APTT AND ANTI-XA LEVELS DURING HEPARIN INFUSION: OUTCOMES IN CIRRHOTIC AND RENAL FAILURE PATIENTS.** Alyssa Sinkov, Elizabeth Brule, Theresa Yarger, Baylor Scott & White All Saints Medical Center – Fort Worth, Fort Worth, TX.

**Background:** The utility of measuring the anticoagulation effects of heparin with aPTT (activated partial thromboplastin time) and anti-Xa (anti-factor Xa) in special populations is uncertain. It is hypothesized that cirrhotic and end-stage renal disease patients will have discrepant aPTT and anti-Xa levels and higher risk for adverse events during heparin therapy. Cirrhosis of the liver and end-stage renal disease result in altered hemostasis during which patients may simultaneously be at risk for both thrombosis and bleeding.

**Purpose:** The objectives of this study are to identify the characteristics of the patient populations at risk for discrepant aPTT and anti-Xa levels and to evaluate outcomes in these patients.

**Methods:** Simultaneous aPTT and anti-Xa levels were collected on all patients who received heparin infusions between June 2015 through December 2015 at Baylor Scott & White All Saints Medical Center-Fort Worth. The following data were collected: length of stay, medical service, age, weight, height, body mass index, sex, ethnicity, heparin indication, days of heparin therapy, use
XI-19
INITIATION OF TARGET-SPECIFIC ORAL ANTICOAGULANTS FOR ATRIAL FIBRILLATION AND VENOUS THROMBOEMBOLISM: IMPACT ON TIME TO HOSPITAL DISCHARGE. Kim Vo, Nathan Fewel, Amanda Basto, Mia Ta, Eileen Stock, Central Texas Veterans Health Care System, Department of Veterans Affairs, Temple, TX.

PURPOSE: The primary objective is to compare time from oral anticoagulation initiation until hospital discharge for warfarin versus direct oral anticoagulants (DOACs) for the treatment of non-valvular atrial fibrillation or venous thromboembolism. The secondary objective is to compare co-morbidities, which may influence hospital length of stay, and to describe rates of 30 and 90 day emergency department visits and hospital readmission between the two groups.

METHODS: Data will be retrospectively collected from the institution’s electronic records. Patients will be excluded for the following: > 89 years old, end-stage renal impairment, severe liver disease, valvular atrial fibrillation, prosthetic heart valve, or use of oral anticoagulation for > 14 days in the hospital. Chi-square analyses will be used to compare additional co-morbidities and 30 and 90-day ED/readmission between the warfarin and target-specific anticoagulant groups. A Cox proportional hazards model will be employed to determine whether or not there is a difference in the time (in hours) to discharge.

RESULTS & CONCLUSIONS: This study has been approved by the IRB and is currently in data collection phase. The results and conclusions will be available when the study is completed.

XI-19
Efficacy of 6 mg Single Fixed-Dose Rasburicase for Prophylaxis and Treatment of Tumor Lysis Syndrome in a Hospital Network of Adult and Pediatric Hematology/Oncology Patients. Lindsay Edmondson, Leticia Villela Smith, Thanhhoa Ngo, Eimeira Padilla-Tolentino, Seton Healthcare Family, Austin, TX.

PURPOSE: Tumor lysis syndrome involves a rapid lysis of malignant cells that can lead to increases in uric acid, serious electrolyte disturbances, and kidney failure. Rasburicase is used to prevent and treat tumor lysis syndrome in pediatric and adult oncology patients. Current practice guidelines recommend dosing rasburicase based on body weight with duration of therapy dependent on response. The purpose of this study is to determine if a single 6 mg fixed-dose of rasburicase is non-inferior in efficacy to traditional weight-based dosing in both adult and pediatric hematology/oncology patients for the prevention or treatment of tumor lysis syndrome.

METHODS: This study is a retrospective, non-inferiority cohort study. In 2010, the Seton Healthcare Family network of hospitals switched from using multiple weight-based dosing of rasburicase to using a single fixed-dose of rasburicase. Treatment success of patients who received weight-based dosing of rasburicase was compared to the treatment success of patients who received a single fixed 6 mg dose within the Seton Healthcare Family. Uric acid levels at baseline and 24 hours after rasburicase doses were used to determine treatment success.

RESULTS: Data was collected from 204 patient charts. Fifty-five patients received weight-based dosing and 149 patients received a 6 mg dose. Preliminary results suggest the single fixed-dose of 6 mg was non-inferior to weight-based dosing in these patients. Final results will be presented at the meeting.

XII-2
EXPERIENCE WITH IBRANCE® (PALBOCICLIB) AT THE UNIVERSITY OF TEXAS MEMORIAL HERMANN CANCER CENTER. Kiydra Harris, Oluwaseyi Fasiku, Oluchi Juliet Emelogu, Rodney Hunter Texas Southern University College of Pharmacy and Health Sciences, Houston, TX.

PURPOSE: The U.S. Food and Drug Administration granted accelerated approval of IBRANCE® (palbociclib) in combination with letrozole, for first-line treatment of postmenopausal women with estrogen receptor-positive, human epidermal growth factor receptor 2-negative (ER-positive/HER2 negative) advanced breast cancer as initial endocrine-based therapy for their metastatic disease on February 3, 2015.2 This study evaluates IBRANCE® (palbociclib) plus letrozole as second or third line therapy in postmenopausal women and IBRANCE® (palbociclib) plus Zoladex® (goserelin) or Faslodex® (fulvestrant) in premenopausal women.

METHODS: The study was approved through the University of Texas Health and Memorial Hermann’s institutional review board. This open-label, phase 4 study, included premenopausal and postmenopausal women with advanced ER-positive breast cancer who are treatment experienced and naive. Patients were enrolled in two
separate cohorts that accrued sequentially: in cohort 1, patients were enrolled on the basis of their ER-positive and HER2-negative biomarker status alone, whereas in cohort 2 they were also required to have cancers with amplification of cyclin D1 (CCND1), loss of p16 (INK4A or CDKN2A), or both. In both cohorts, patients were randomly assigned 1:1 via an interactive web-based randomization system, stratified by disease site and disease-free interval, to receive palbociclib (125 mg PO Daily 21 days ON and 7 days OFF) plus goserelin (3.6 mg SC every 4 weeks) or fulvestrant (500 mg Day 1, Day 15, Day 29, then every 4 weeks) or continuous oral letrozole 2.5 mg daily plus oral palbociclib 125 mg, given once daily for 3 weeks followed by 1 week off over 28-day cycles. The primary endpoint was investigator-assessed progression-free survival (PFS) and overall survival (OS) of patients in clinic recurred or still receiving IBRANCE® (palbociclib) treatment. The secondary endpoint will assess objective response rate and treatment discontinuation secondary to severe adverse effects.

RESULTS: To date progression-free survival events have not been evaluated due to lack of occurrence. All patients except one patient are still currently receiving IBRANCE® (palbociclib) treatment. One patient was heavily pretreated and had to discontinue use of IBRANCE® (palbociclib). To date only one patient receiving IBRANCE® (palbociclib) in combination with letrozole has passed away.

CONCLUSION: Patients are still being followed and no progression has been recorded in any of the treatment arms thus far. Toxicity profiles of patients on palbociclib + letrozole, palbociclib + fulvestrant, palbociclib + fulvestrant + goserelin are similar. Data collection is ongoing and an interim investigator initiated analysis well be performed at 12 months.

XII-3
EVALUATION OF THE INITIATION OF RAPID RITUXIMAB INFUSION AT AN ACADEMIC MEDICAL CENTER. Matthew Lei, Breanne Peyton, Caitlin Shamroe, Kelsey Trimble, University Health Shreveport, Shreveport, TX.

PURPOSE: Rituximab, a chimeric monoclonal anti-CD20 antibody, carries a boxed warning for a serious infusion reaction within twenty-four hours of administration, necessitating lengthy infusion durations. However, the utilization of a rapid infusion rituximab protocol has been proven to decrease the length of infusion and be safely administered. The purpose of this study is to evaluate the implementation of a rapid infusion rituximab protocol by comparing the duration of infusion of rituximab, as well as the incidence of adverse effects associated with rituximab infusion, before and after the implementation of a rapid infusion rituximab protocol.

METHODS: Using data retrospectively collected from the institution’s electronic records, we evaluated patients who received non-initial rituximab infusion six months prior to protocol implementation and patients who will receive rapid infusion rituximab after protocol implementation six months post-protocol implementation. Patients greater than 18 years of age with a diagnosis of non-Hodgkin’s lymphoma or chronic lymphocytic leukemia will be included. A hospital approved rapid infusion rituximab protocol was implemented on October 1, 2015. Descriptive and comparative statistics will be used to evaluate the mean and median infusion duration and incidence of adverse events pre- and post-protocol implementation.

RESULTS: An interim analysis is currently being performed of the period six months prior to protocol implementation and three months post protocol implementation.

CONCLUSION: An interim analysis is currently underway.

XII-4
EVALUATING THE APPROPRIATENESS OF CURRENT MONITORING PRACTICES FOR EVEROLIMUS, IMATINIB, AND SORAFENIB AT HARRIS HEALTH SYSTEM. Trang T. Phan, Clement Chung, Sara Ruppelt, Harris Health System, Houston, TX.

PURPOSE: There has been a consistent shift in cancer treatment over the past ten years from parenteral chemotherapy to oral chemotherapy (OCT). It is estimated that 25% of all patients currently undergoing chemotherapy are treated with OCT agents. The primary objective of this study is to assess the frequency and the duration of monitoring for the common adverse effects (AEs) associated with three oral chemotherapy agents: everolimus, imatinib, and sorafenib. The secondary objectives of this study are to determine the severity and frequency of these AEs and to assess if these AEs were properly managed with the appropriate medications and labs.

METHODS: This study is a multi-center, retrospective chart review of patients who have been prescribed everolimus, imatinib, and sorafenib. Epic®, a central health records database, will be used to identify patients ≥18 years of age who are prescribed one of the study agents for any oncology related FDA indication from March 1, 2010 to March 31, 2015. Data collected will include demographics, indication for OCT use, pertinent clinical characteristics of the patient, date written for OCT prescription, date of follow-up visits, AEs associated with each study agent, medication(s) used to treat AEs, and pertinent lab values related to AEs. This information will be evaluated and compared to current clinical guidelines and recommendations.

Results: Pending

Conclusion: Pending

XII-5
PHARMACOGENOMIC ASSOCIATION WITH NEUROTOXICITY IN HISPANIC CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA (ALL). Claire A. McClain, M. Brooke Bernhardt, Amanda Berger, Eric S. Schafer, Michael Scheurer, Texas Children’s Hospital, Houston, TX.

PURPOSE: Vincristine is vital in the treatment of ALL, but is dose-limited by the development of disabling neuropathies. Vincristine is metabolized extensively by polymorphically expressed CYP3A4/5, which contributes to its 10-fold inter-patient pharmacokinetic variability. Further, there is evidence that an inherited polymorphism in the CEP72 gene contributes to vincristine sensitivity. Hispanic children have among the lowest rates of ALL survival when compared to other ethnicities, and
pharmacogenomic variability among races is postulated to contribute. The objective of this study is to characterize the CYP3A5 and CEP72 genotypes in Hispanic patients with ALL and describe the relationship to the development of neurotoxicity.

METHODS: This study, approved by an appropriate institutional review board, examines the association between both CYP3A5 and CEP72 genotypes and the development of neurotoxicity in 300 pediatric Hispanic patients with ALL at Texas Children’s Hospital. All blood samples for germline DNA were previously collected at time of remission and banked. Allele discrimination of CEP72 and at the CYP3A5*3, *6, and *7 polymorphic loci will be performed using TaqMan assays. Patient medical records will be electronically searched for evidence of neuropathic events by running queries of the following: neuropathy-associated ICD9 codes, vincristine dose reductions and the use of neuropathy-modifying medications: gabapentin, pregabalin, morphine, hydrocodone/acetaminophen, and codeine/acetaminophen. Resultant records will be thoroughly examined for evidence of physician-documented peripheral neuropathy. Such noted neuropathies will be categorized as motor or sensory and graded using the Modified (“Balis”) Pediatric Scale of Peripheral Neuropathies. Multivariate analysis will be run modeling the influences of CYP3A5 and CEP72 genotypes as well as total vincristine dose and use of the concomitant medications: azole antifungals and nelarabine on the development of greater than or equal to Grade 3 neuropathies. Descriptive statistics will be used to identify relationships between CYP3A5 and CEP72 genotypes and gender, age, and time to neuropathic event.

XII-6
RISK FACTORS FOR CLOSTRIDIUM DIFFICILE-ASSOCIATED DIARRHEA IN ADULT CANCER PATIENTS WITHOUT RECENT ANTIBIOTIC EXPOSURE. Brian Le, Gary Jean, David E. Gerber, UT Southwestern Medical Center, Dallas, Texas.

PURPOSE: It is well documented that antibiotics use can lead to Clostridium difficile-associated diarrhea (CDAD), but there have been numerous incidents at our institution where cancer patients have been admitted for or developed CDAD without any prior antibiotic use. The purpose of this study is to examine system and patient-specific factors that may influence the development of CDAD in our adult cancer patient population.

METHODS: In order to better identify cancer patients at higher risk for developing CDAD, a retrospective analysis is being conducted utilizing patient cases from January 1, 2008 until July 1, 2015 at The University of Texas Southwestern Medical Center (UTSW) in Dallas, Texas. Patients will be identified for inclusion using the UTSW Cancer Registry and electronic medical record (EMR) system. Eligible patients will be those that were hospitalized, at least 18 years old, tested positive for Clostridium difficile by enzyme immunoassay (EIA) or polymerase chain reaction (PCR), and had an active cancer diagnosis at onset of diarrhea. Excluded patients will be those that have documented antibiotic use within four weeks of onset of CDAD. Other information to be collected from the EMR includes radiation treatment, surgery, medications, patient age, age at cancer diagnosis, gender, ethnicity, body mass index, serum creatinine, serum albumin, white blood cell count, length of stay, and history of prior Clostridium difficile infection. All data will be maintained confidentially on a secured server. Once all data has been collected, the data will be de-identified and broken down for subgroup analysis. This study has been reviewed and approved by the UTSW Institutional Review Board.

RESULTS: Research in progress.

CONCLUSION: Research in progress. We hypothesize that agents, procedures, and cancers affecting the gastrointestinal tract will have a higher incidence of CDAD.

XII-7
INCIDENCE OF ACUTE KIDNEY INJURY IN PEDIATRIC ONCOLOGY PATIENTS RECEIVING COMBINATION THERAPY WITH VANCOMYCIN AND PIPERACILLIN-TAZOBACTAM OR CEFEPIME. Alaina Burns, Veronica Nguyen, Megan Smith, Kyana Stewart, Theodore Laetsch. Children’s Health, Children’s Medical Center of Dallas, Dallas, Texas.

BACKGROUND: Recent literature has suggested an increased incidence of acute kidney injury when piperacillin-tazobactam and vancomycin are used in combination, however limited data exist characterizing this potential side effect in pediatric oncology patients.

PURPOSE: To compare the incidence of acute kidney injury in pediatric oncology patients receiving combinations of vancomycin and piperacillin-tazobactam or cefepime.

METHODS: This retrospective chart review included oncology patients admitted to the oncology or pediatric intensive care units at Children’s Health, Children’s Medical Center of Dallas between January 1, 2013, and December 31, 2015. Patients less than or equal to 18 years of age who received at least 48 hours of combination therapy with vancomycin and piperacillin-tazobactam or cefepime were included. Patient demographics, antibiotic dosing regimens, serum creatinine, and administration of nephrotoxic medications were recorded. Descriptive statistics were used to compare the incidence of acute kidney injury and patient characteristics between the two groups.

RESULTS AND CONCLUSIONS: To date, 613 patients were screened with 39 patients meeting inclusion criteria (29 in piperacillin-tazobactam and vancomycin group, 10 in cefepime and vancomycin group). Preliminary results show an increased incidence of acute kidney injury with piperacillin-tazobactam and vancomycin combination therapy in comparison to cefepime and vancomycin (34.5% vs. 20%). Further data analysis is in progress and final results are pending.
XII-8
COMPARISON OF EFFICACY AND SAFETY OUTCOMES BETWEEN WARFARIN AND TARGET SPECIFIC ORAL ANTICOAGULANTS (TSOACs) IN PATIENTS ON CONCURRENT ANTIARRHYTHMIC MEDICATIONS. Jason Mersek1, Caroline Pham1, Kaushal Patel1, Matthew Wanat1,2, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX; University of Houston College of Pharmacy.

Background: Combination therapy with oral anticoagulants and amiodarone is frequently utilized in patients with non-valvular atrial fibrillation. The drug-drug interaction profile between warfarin and amiodarone is well understood, but less data exists on clinical outcomes associated with concomitant target specific oral anticoagulants (TSOACs) and amiodarone.

Objective: The primary objective is to compare the clinical efficacy of warfarin and TSOACs in patients on concomitant amiodarone. The secondary objective is to identify if warfarin or TSOACs have a safer bleeding profile when used in patients on concomitant amiodarone.

Methods: A single center, retrospective analysis will be conducted on adult patients taking warfarin or a TSOAC, and concomitant amiodarone, between January 1, 2014 and July 1, 2015. The research population will be identified by a pharmacy-generated report that documents dispensed outpatient prescriptions for both warfarin or a TSOAC, and concomitant amiodarone, in patients with atrial fibrillation. Patients will be excluded if they are under the age or 18, or pregnant. The primary endpoint will be a composite of systemic thromboembolism, stroke, major bleeding (International Society of Thrombosis and Hemostasis definition), and/or death documented and confirmed by objective evidence or clinical diagnosis in the patients' electronic medical record. The secondary safety endpoint will be major bleeding events of patients throughout the study. All continuous variables will be analyzed using the student t-test and categorical data will be analyzed with the chi-squared test.

Results: pending

Conclusion: pending

Disclosures: none

XII-9
REALLY DOSE ADJUSTED Enoxaparin VERSUS STANDARD DOSE UNFRACTIONATED HEPARIN IN PATIENTS WITH SEVERE RENAL IMPAIRMENT WITH CLINICAL INDICATION FOR VENOUS THROMBOEMBOLISM PROPHYLAXIS: A RETRO-SPECTIVE REVIEW. Jan Richard Ramos, Minh Hong, Leslie Monye, Han Li, Alex Green, Medical Center Health System Odessa, TX.

PURPOSE: To evaluate the relative efficacy and safety of enoxaparin versus unfractionated heparin in preventing venous thromboembolism (VTE) in hospitalized patients with severe renal impairment not undergoing hemodialysis.

METHODS: This is a retrospective review of patients with a documented indication for VTE prophylaxis with concurrent severe renal impairment in hospitalized patients at a tertiary teaching hospital. Patients were identified using a defined timeframe. All patients with the following inclusion criteria were evaluated: adult patients (> 18 years of age) with renal dysfunction defined as creatinine clearance < 30 mL/min based on the Cockcroft-Gault equation with a clinical indication documented for VTE prophylaxis and treated with either renally dose adjusted enoxaparin or unfractionated heparin. Data was collected using institution specific computerized physician order entry.

RESULTS: Results to be presented.

CONCLUSION: To be presented.

XII-10
NOVEL ORAL ANTICOAGULANTS IN OBESITY INVESTIGATING RECURRENT OF VENOUS THROMBOEMBOLISM. Claire Reuter, Ashley Casey, Jenny Puchot, Kyle Davis, Ochsner Medical Center, New Orleans, LA.

PURPOSE: While obesity is a well-known risk factor for venous thromboembolism (VTE), this population is frequently underrepresented in clinical outcomes trials. The purpose of this study was to evaluate the rate of recurrent VTE and bleeding events in obese and non-obese patients receiving new oral anticoagulant (NOAC) therapy for the treatment of VTE at Ochsner Medical Center in New Orleans, Louisiana.

METHODS: This was a retrospective cohort study via electronic chart review from September 30, 2012 to September 30, 2015 of patients receiving anticoagulation therapy with apixaban, dabigatran or rivaroxaban for the treatment of deep vein thrombosis or pulmonary embolism. The primary outcome was the recurrence of VTE at 3 months after initial VTE. Secondary outcomes included recurrence of VTE at 1 and 6 months, rate of significant bleeding during the treatment period, and incidence of significant drug interactions.

RESULTS: A total of 364 patients were reviewed and 133 patients met the inclusion criteria. The average BMI of all patients was 31.6 kg/m\(^2\) (24.8 kg/m\(^2\) non-obese vs. 36.8 kg/m\(^2\) obese, p<0.0001). The gender of included patients was 45.9 % males (50% vs. 42.9%, p=0.4). The baseline comorbidities of both groups were similar; however, a higher rate of malignancy was seen in the non-obese patient group compared to obese patients (37.9% vs. 9.3%, p<0.0001). Of the NOAC agents, 48.1% of patients received apixaban (41.4% non-obese vs. 53.3% obese), 6.8% received dabigatran (8.6% vs. 5.3%), and 45.1% received rivaroxaban (50% vs. 41.3%). For the primary outcome, there was no significant difference in the VTE recurrence rate at 3 months between non-obese vs. obese patients (1.7% vs. 2.7%, p=0.99). For the secondary outcome, there were no patients who experienced a recurrent VTE at 1 month and recurrence at 6 months was the same as the rate at 3 months. Also, no patients experienced bleeding events during the treatment period. Finally, the incidence of drug interactions did not correlate with VTE recurrence or bleeding events.

CONCLUSION: While no difference in recurrence was found between non-obese and obese patients, this study was not appropriately powered to show a statistically significant difference. Therefore, further clinical studies with larger sample sizes are required to support previous pharmacokinetic studies.
XII-11
DEVELOPMENT AND IMPLEMENTATION OF
HEPARIN-INDUCED THROMBOCYTOPENIA
PROTOCOL AND IMPACT ON PATIENT CARE
AND COST. Jacqueline Medina, Norman Regional Health
System, Norman, OK.

Purpose: Heparin-induced thrombocytopenia (HIT), a life-
threatening condition, can occur in up to 5% of patients
receiving heparin products. HIT is often over-diagnosed
due to the low specificity of readily available antigen
assays. The lack of updated guidelines has led to varying
approaches to the treatment of HIT. With high cost and
mortality, it is imperative to use clinical judgement and
available resources to quickly and accurately treat patients
with higher probabilities of HIT, while using sensitive tests
to rule out HIT. This study evaluates HIT-related practices
followed by development and implementation of a protocol
to guide diagnosis and treatment.

Methods: This is an observational, non-randomized, IRB
approved study that utilized the electronic medical record
to conduct chart reviews. The study consists of three
phases: initial assessment of current practices in diagnosis
and treatment of patients with suspected and confirmed
HIT, followed by implementation of a developed HIT
protocol, then a follow-up assessment for improvement in
patient care, outcomes and costs. The initial retrospective
portion of the study consisted of data collection from 30
subjects with a platelet-factor-4 laboratory test ordered
from February to March 2015. Data collected included
other potential causes for thrombocytopenia, laboratory and
imaging studies ordered and resultant values, and
medications initiated or discontinued.

Results: Preliminary results indicate that current practices
over-test and over-treat patients with a low probability of
HIT and that patients with high probability of HIT were not
adequately treated. HIT testing was merely used to exclude
HIT as the etiology of thrombocytopenia and not because it
was suspected. Overall, HIT-related practices do not allow
for efficient, timely diagnosis or effective treatment. The
planned implementation of a developed protocol should
improve HIT-related care and cost.

XII-12
EVALUATION OF RIVAROXABAN AND
APIXABAN PRESCRIBING PATTERNS AND
ASSOCIATED OUTCOMES IN PATIENTS WITH
ATRIAL FIBRILLATION AT A LARGE ACADEMIC
MEDICAL CENTER. Nhu Quyen Dau, Miguel Salazar,
Mahboob Alam, Kimberly Putney, Maryam Bayat, CHI St.
Luke’s Health Baylor St. Luke’s Medical Center, Houston,
TX.

PURPOSE: Few studies have evaluated the use of direct
oral anticoagulants (DOACs) in patients with atrial
fibrillation in the clinical setting. Understanding the factors
used by clinicians in the selection of DOACs for atrial
fibrillation would help identify what types of patients are
most likely to benefit from these agents. The purpose of
this study is to assess rivaroxaban (RIV) and apixaban
(APX) prescribing patterns for patients with atrial
fibrillation at a large academic medical center and
associated outcomes in relation to bleeding, mortality, and
rate of readmission due to a composite of stroke, systemic
embolism, and bleeding.

METHODS: This is a single-center, randomized,
retrospective review of patients on rivaroxaban or apixaban
for atrial fibrillation. The appropriateness of the DOAC
dose was determined based on the United States Food and
Drug Administration (FDA) package insert. The primary
endpoint was the documented occurrence of major bleeding
at anytime while on treatment as defined by the
International Society on Thrombosis and Haemostasis
criteria (ISTH). The secondary endpoints were all-cause
mortality and the readmission rate attributable to a
composite of stroke, systemic embolism, or bleeding.
Prescribing patterns were assessed based on patient’s age,
CHA_2DS_2_VASc score, renal function, BMI, and
prescriber service.

RESULTS: An interim analysis of 90 patients was
performed. For the APX group (n=46), two patients (4.3%)
were admitted with major bleeding (vaginal and
gastrointestinal bleeding). One of these patients was
readmitted for gastrointestinal bleed but no active bleeding
was detected on endoscopy. No mortality was reported in
the APX group. One patient (2.3%) was admitted with
major bleeding (hemorrhagic stroke) in the RIV group
(n=44). Another patient was readmitted for minor
gastrointestinal bleed. Two patients (4.5%) in the RIV
group died due to congestive heart failure. APX was
prescribed more often in elderly patients (≥ 80 years) when
compared to RIV (p<0.05) while RIV was more often
prescribed in patients with BMI > 30 kg/m². CHA_2DS_2
or CHA_2DS_2_VASc scores were not correlated with the
selection of APX over RIV. The appropriateness of dose
was not affected by the prescriber service for either
medication. APX and RIV were used in nine patients with
atrial fibrillation and valvular heart disease (non-approved
FDA indication).

CONCLUSION: There were more patients (n=2) with
major bleeding events in the APX group compared to RIV
(n=1), but the differences were not statistically significant.
All cause mortality (4.5%) was higher in the RIV group.
There was no difference between the proportion of bleeding
events or readmissions due to a composite of stroke,
systemic embolism, or bleeding between the apixaban and
rivaroxaban groups.

XII-13
RISK FACTORS FOR THE DEVELOPMENT OF
VENOUS THROMBOEMBOLISMS IN
NEUROCRITICAL CARE PATIENTS. Minoosh
Sobhanian, Teresa Allison, Memorial Hermann Hospital-
Texas Medical Center, Houston, TX.

Purpose: Venous thromboembolisms (VTE) during
hospitalization are a significant cause of prolonged
hospitalization, long-term morbidity, and mortality. Risk
factors for VTE are similar in neurocritical care patients
compared to general intensive care unit (ICU) patients.
However, additional predictors potentially put this
population at higher risk. The purpose of this study is to
evaluate the relationship between risk factors and the
development of VTE in neurocritical care patients.

Methods: This is a retrospective case control study of
patients admitted between July 1, 2012 to August 31, 2015 to the Neuroscience
Intensive Care Unit at Memorial Hermann – Texas Medical
Center. Analyzed data will include baseline demographics,
APACHE II scores, co-morbidities, primary diagnosis, and
home medications. Pertinent daily labs, pharmacological agents and duration of therapy for prophylaxis, and ICU interventions including mobility status will also be evaluated.

**RESULTS:** One hundred and eighty seven out of three hundred patients have been collected; 93 patients in the group who developed a VTE and 94 patients in the group who did not (NVTE). The mean age was 52.7 ± 17.3 years (VTE) vs. 62.5 ± 17.5 years (NVTE); p=0.001. There were more males in the VTE group than NVTE group (67% vs. 38%), while the mean body mass index was similar in both groups (VTE: 28.9 ± 6.6 kg/m² vs. NVTE: 27.2 ± 7.1 kg/m²; p=0.085). The primary diagnosis of traumatic brain injury was the most common admitting diagnosis (VTE: 22% vs. NVTE: 28.7%). Median baseline Glasgow Coma Score was VTE: 9 (IQR: 7 - 14) vs. NVTE: 14 (IQR: 13 - 15). Median length of hospital stay was VTE: 21.5 (IQR: 14.5 - 30.3) days vs. NVTE: 3.6 (IQR: 2 - 7.1) days. Mean time to onset of VTE was 10 ± 9 days.

**Conclusions:** Pending completion of data collection and analysis.

**XII-14**

**IMPACT OF UTILIZING TECHNOLOGY TO IMPROVE PHARMACIST-DRIVEN MEDICATION RECONCILIATION FOR TRANSPLANT PATIENTS.**


**PURPOSE:** According to Institute for Healthcare Improvement’s 100,000 lives campaign, healthcare providers can prevent adverse drug events by implementing medication reconciliation, ultimately reducing morbidity and mortality. Medication errors can occur during transitions of care, and studies have shown more errors occur at discharge than admission. It is uncertain how the use of a new technological function by pharmacists could improve the discharge process. Previously, transplant pharmacists provided paper lists of medication suggestions to physicians for electronic completion of medication reconciliation. The purpose of this study is to assess the impact of technology used by pharmacists in streamlining medication reconciliation at discharge.

**METHODS:** An observational study being performed to assess the impact prior to and after the implementation of a new technological function used by pharmacists within the electronic health record to improve medication reconciliation at discharge for transplanted patients. This function allows the transplant pharmacist to submit a “pended” list of reconciled medications for physician approval. Patients are divided into two groups: a pre-implementation group (Group A: patients transplanted and discharged between June 2014 and December 2014) and post-implementation group (Group B: patients transplanted and discharged between December 2015 and May 2016). Pre- and post-implementation groups will be compared to assess the primary endpoints, which are interventions including: medication duplications, omissions, errors including wrong dose and route, drug interactions, and other interventions made by the pharmacist. Secondary endpoints include assessing the number of readmissions related to discharge medications and estimating the cost avoidance through the discharge medication reconciliation process. Also, a written survey has been developed to assess transplant physicians’ perspectives regarding the new technology used by pharmacists to enhance discharge process.

**RESULTS:** An interim analysis has been performed which evaluated 80 patients in the pre-implementation group for the primary and secondary endpoints. In Group A, 66% of patients were missing at least one medication from their discharge list and 67% of those medications were initiated within the hospital. Although no drug interactions were identified in Group A, 34% of patients had at least one wrong dose on their medication list with 37% of these patients having medications that are overdosed. All prescriber surveys prior to implementation of the function showed favorable results, including 100% (n=4) of prescribers believing that pharmacists play an integral role at the overall discharge process, decreasing readmission rates, and improving overall quality of life. Analysis of transplanted patients (Group B) and prescriber survey post-implementation of the technological function are ongoing.

**CONCLUSION:** Further analysis will need to be performed to assess the impact technology has on a pharmacist-driven medication reconciliation process for transplant patients.

**XII-15**

**DOES AMLODIPINE PRESERVE RENAL FUNCTION IN HEART TRANSPLANT PATIENTS ON TACROLIMUS?**

**DongOuk Lee, Steven Thai, Ochsner Medical Center, New Orleans, LA.**

**PURPOSE:** To assess whether treatment with amloidipine preserves renal function in heart transplant patients on tacrolimus.

**METHODS:** We conducted a retrospective chart review comparing the progression of renal dysfunction at 1 year post transplant between those prescribed amloidipine for treatment of hypertension versus those not taking amloidipine in patients who had undergone heart transplant at Ochsner Medical Center and prescribed tacrolimus for immunosuppression. The primary outcome was the proportion of patients in the amloidipine vs. no amloidipine group with a decrease in estimated glomerular filtration rate (eGFR) of greater than 30 mL/min/1.73m² at 12 months post transplant. Secondary outcome was mean change in eGFR at 12 months post transplant.

**RESULTS:** Of 53 patients included in the study, 34 were prescribed amloidipine. At 12 months post transplant, 10 patients (29.4%) in the amloidipine group, as compared with 7 (36.8%) in the no amloidipine group had a decrease in the eGFR of greater than 30 mL/min/1.73m² (P=0.58). There was no significant difference in the annual decline of eGFR between the two groups (-22.3 vs. -27.7 in the amloidipine and no amloidipine group respectively. P=0.39).

Multivariate logistic regression identified ischemic cardiomyopathy as the only independent predictor of the primary outcome (OR, 7.727; 95% CI, 1.392-42.903).

**CONCLUSION:** Treatment with amloidipine did not significantly reduce renal dysfunction in heart transplant patients receiving tacrolimus.
Mozhgon Moaddab, Alejandro Restrepo, Kimberly Putney, Raymond Yau, CHI St. Luke’s Health – Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: Cytomegalovirus (CMV), one of the most important viral pathogens affecting outcomes following liver transplantation, is responsible for significant morbidity and mortality. Although not FDA-approved for this indication, valganciclovir is an option for CMV prophylaxis in liver transplant recipients at discharge. Given the extensive clinical impact of CMV infection in liver transplantation, it is important to assess the prophylactic regimens used at this institution. The purpose of this study is to determine the incidence of CMV infection, assess the effectiveness of antiviral therapies based on patient risk factors, and to assess clinical outcomes.

METHODS: A retrospective, observational study was conducted to assess CMV prophylaxis regimens received and disease incidence in liver transplant recipients based upon CMV donor and recipient serology status from May 2013 – June 2015 at Baylor St. Luke’s Medical Center. High risk CMV recipient/donor serostatus is R-/D+ and low/moderate risk CMV recipient/donor serostatus includes R-/D-, R+/D+ and R+/D-. CMV prophylaxis regimens at our institution include intravenous (IV) ganciclovir for 100 days or valganciclovir for 200 days for the high risk group and acyclovir for 90 days in the low/moderate risk groups. The time period assessed began on the day of transplant and ended with follow-up until June 2015 or the time of patient mortality.

RESULTS: An interim analysis of 96 patients was performed. Patient characteristics include: 65% male, median age of 60 years (IQR 55-64), median MELD score of 31 (IQR 27-37) with 33% of patients requiring transplant due to Hepatitis C (HCV) infection/hepatocellular carcinoma (HCC). Of the liver transplant recipients analyzed, 15% were of high risk CMV serostatus. The majority of patients (61%) were in the CMV serostatus R+/D+ group. CMV PCR was performed on 85% of liver transplant recipients analyzed with an overall CMV viremia incidence of 8%. The incidence of CMV viremia in high risk recipients was 14%. The incidence of CMV viremia in the low/moderate risk recipients was 7%. Overall incidence of rejection was 2% and overall mortality was 4% of the liver transplant recipients assessed.

CONCLUSION: There was a higher incidence of CMV viremia in the high risk group. Further analysis will need to be performed to determine if valganciclovir is a reasonable option in high risk patients.

Elizabeth M. Lessmann, Tiffany Le, Joshua Werth, Qasim Mirza, INTEGRIS Baptist Medical Center, Oklahoma City, OK.

PURPOSE: To describe the efficacy of three antifungal regimens in status post lung transplant recipients dating back to 2008 at INTEGRIS Nazih Zuhdi Transplant Institute and assess their efficacy in reducing the occurrence of invasive fungal infections. Currently, there is still debate as to which first line antifungal agent(s) should be used preferentially in this population, as a national guideline has yet to be established.

METHODS: Using data retrospectively collected from the institution’s electronic medical records, post lung transplant recipients were included if they were 18 years of age or older who have undergone a lung transplant at INTEGRIS Nazih Zuhdi Transplant Institute and who received one of the three antifungal prophylaxis regimens dating back to 2008: no prophylaxis, voriconazole prophylaxis, or nebulized amphotericin B prophylaxis. Patients were excluded if they were less than 18 years of age who are lung transplant recipients that received care from another transplant center. Criteria for diagnosis of invasive fungal infection were set by the European organization for research and treatment of cancer/invasive fungal infections cooperative group and the national institute of allergy and infectious disease mycoses study group (EORTC/MSG) consensus group. Proven invasive fungal infection was defined as isolation of aspergillus or candida species from a normally sterile body fluid or histopathologic or cytopathologic examination showing hyphae from biopsy specimen with evidence of associated tissue damage.

RESULTS: In progress

CONCLUSION: In progress

Sebastian Biglione, Teena Sam, Jessica Rago, Giuliano Testa, Baylor University Medical Center, Dallas, TX.

PURPOSE: To compare short-term outcomes of a steroid-free immunosuppressive protocol at Baylor University Medical Center to its steroid-containing counterpart in the context of living donor liver transplant.

METHOD: A retrospective, chart review study analyzing consecutive living donor liver transplants from 01/01/2014 to 04/01/2016 at our center. Patients were grouped into two cohorts: those who received steroid-containing maintenance immunosuppression (Group A) and those who received steroid-free maintenance immunosuppression (Group B). The primary study endpoint was glycemic control during post-operative course. Secondary outcomes included graft function, length of stay, readmission rate, graft survival, patient survival, infectious complications and renal function. Summary statistics are reported with the appropriate measures of central tendency and data was analyzed for normality of distribution with statistical
significance determined using appropriate parametric tests and their non-parametric analogs.

RESULTS: In progress.
CONCLUSION: In progress.