ALCALDE XXXI

SOUTHWEST LEADERSHIP CONFERENCE
For Pharmacy Residents, Fellows & Preceptors

ABSTRACTS OF PLATFORM PRESENTATIONS
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EVALUATION OF PERIPROCEDURAL BLEEDING RATES IN PATIENTS RECEIVING RIVAROXABAN BASED ON PREPROCEDURAL HOLD TIMES. Hannah Eberle, Tamara Knight, Evan Peterson, Paige Parsons. Seton Healthcare Family, Austin, TX.

PURPOSE: Periprocedural management of direct oral anticoagulants is not well defined; hold times are taken from package insert and pharmacokinetic data because this subject has not been evaluated prospectively. Our main objective was to identify periprocedural major bleeding rates in patients receiving rivaroxaban and to determine what effect preprocedural hold times had on these rates. Secondary objectives included identifying the rate of clinically relevant non-major bleeding events and the rate of thrombosis.

METHODS: This study was approved by the Institutional Review Board. It was a retrospective, multicenter, cohort study comparing bleeding rates in patients receiving periprocedural rivaroxaban based on hold time and renal function. Rates of bleeding were compared between patients who had rivaroxaban held for the recommended time of four to five half-lives - at least 48 hours for CrCl greater than 30 mL/min or at least 72 hours for CrCl less than 30 mL/min - to those who had rivaroxaban held for less than the recommended time. Patients were identified using ICD-9 codes for surgical procedures and a home medication database identifying patients receiving rivaroxaban 15 mg or 20 mg. Orthopedic, kidney, bladder, prostate, intra-abdominal, cardiac, and CNS procedures were included; low risk bleeding procedures were excluded. Exclusion criteria included thrombocytopenia, low hemoglobin, preprocedural hold times, or unknown timing of last rivaroxaban dose. The following data was collected: age, sex, height, weight, ethnicity, comorbidities, hemogram, serum creatinine, liver function tests, doses of rivaroxaban, concomitant medications that increase bleeding risk, type and timing of surgery, occurrence of bleeding, and receipt of blood transfusions. Given an estimated baseline event rate of 12 percent in the arm with shorter than recommended hold times, 358 patients would provide 80 percent power to detect a 67 percent reduction in bleeding rates.

RESULTS: in progress

CONCLUSIONS: in progress

SAFETY OF APIXABAN VERSUS WARFARIN IN PATIENTS WITH SEVERE KIDNEY DISEASE. Joseph Schafer, Britta Staubes, Ashley Casey, Kristina Dupre, Ochsner Medical Center, New Orleans, LA.

PURPOSE: Warfarin and direct oral anticoagulants (DOACs) are long-term therapies used in the treatment of atrial fibrillation (AF) and venous thromboembolism (VTE) patients. The lack of randomized clinical trials for anticoagulation in the severe kidney disease population leaves a question of which agent is the most optimal therapy. The aim of this study is to evaluate major bleeding, stroke, and thromboembolism rates in patients with chronic kidney disease (CKD) stage 4 and 5 on apixaban or warfarin therapy.

METHODS: This was a retrospective cohort study via electronic chart review from January 1, 2013 to November 31, 2016 of patients with severe kidney disease, defined as a glomerular filtration rate (GFR) of <29 mL/min/1.73m² and/or on dialysis, receiving anticoagulation therapy with apixaban or warfarin for the prevention of stroke or recurrent VTE. The observational period lasted a minimum of three months and a maximum of one year. The primary outcome was the occurrence of major bleeding at 3 months after enrollment. Secondary outcomes included occurrence of major bleeding at 6 and 12 months, occurrence of stroke...
RESULTS: From a total of 1135 charts reviewed, 531 were excluded and 604 patients were included in the analysis (302 in each arm). The percentage of apixaban and warfarin patients with a major bleed at 3, 6, and 12 months were 8.28% vs 9.93% (p=0.47), 9.60% vs 13.58% (p=0.12), and 10.93% vs 20.86% (p=0.0008), respectively. Fatal bleeding rates for apixaban and warfarin patients were 0.66% vs 3.31% (p=0.036), respectively. The percentage of apixaban and warfarin patients that bled into a critical organ was 1.66% vs 4.64% (p=0.032). The percentage of apixaban and warfarin patients with a stroke at 3, 6, and 12 months were 0.33% vs 0.66% (p=0.56), 0.99% vs 0.99% (p=1.00), and 1.66% vs 1.32% (p=0.73), respectively. The percentage of apixaban and warfarin patients with a recurrent VTE at 3, 6, and 12 months were 0.99% vs 0.66% (p=0.65), 0.99% vs 1.32% (p=0.70), and 0.99% vs 1.66% (p=0.47), respectively.

CONCLUSION: Patients with severe kidney disease taking apixaban had similar bleeding rates at 3 months compared to those taking warfarin. However, when examined over a 12 month period, warfarin had significantly higher fatal bleeding and major bleeding rates compared to apixaban. There were no differences in stroke or recurrent VTE rates.

PL 1-4
EVALUATION OF APIXABAN VERSUS WARFARIN IN PATIENTS ON DIALYSIS AT A LARGE ACADEMIC MEDICAL CENTER. Nhu Quyen Dau, Miguel Salazar, Maryam Bayat, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: Dialysis patients have several coagulation and platelet abnormalities, which increase the risk of bleeding. Warfarin (WARF) remains the anticoagulant of choice for end stage renal disease (ESRD) patients maintained on dialysis due to limited data for the use of new oral anticoagulants in this patient population. Major bleeding rates for dialysis patients on WARF based on clinical trials range from 0.1 to 0.54 events/patient-year of warfarin exposure. There is limited data regarding the bleeding events in dialysis patients on apixaban (APX) because these patients were excluded from clinical trials. However, the Food and Drug Administration approved a labeling change for apixaban to include patients on dialysis in January 2014. This dosing recommendation was based on pharmacokinetic and pharmacodynamic data in 8 subjects on dialysis. Thus, it is unknown if bleeding risk increases in dialysis patients on APX when compared to WARF.

METHODS: This was a retrospective, single-site, chart review based investigation of dialysis patients on APX and WARF. The primary objective of this study was to assess the incidence of major bleeding events while the patient was remained on APX or WARF.

RESULTS: A total of 247 APX and 77 WARF patient charts were reviewed for inclusion. Patients were excluded if not on APX or WARF and dialysis concomitantly. There were more major bleeding events in the APX group (n=4) than the WARF group (n=3). APX increases the risk of major bleeding by 38% when compared to the WARF arm but was not statistically significant (OR 1.38, CI95 0.21-10.32, p = 0.69). The mean HASBLED score for APX arm was higher than WARF arm (3.73 versus 3, p=0.006). There was also a statistically significant difference for thromboembolic events with four in the WARF group and zero in the APX group (p=0.04). Age, weight and hemoglobin upon admission were not correlated with increased bleeding risk. For the APX arm (n=30), HASBLED score was associated with increased major bleeding events with a mean score of 4.5 for the bleeders (CI95 0.02-1.75, p=0.04). All major bleeding events for the APX group were gastrointestinal. All patients received appropriate dose of APX based on manufacturer recommendation. For the WARF arm (n=30), the three bleeding events were subdural hemorrhage, hematoma of the neck and AV fistula bleeding. The mean HASBLED score for the bleeders in the WARF group when compared to non-bleeders in the WARF group was similar. All-cause mortality not related to WARF or APX use was higher in the warfarin group.

CONCLUSION: In the present analysis, we have provided real-life data on the safety of APX and WARF in patients on dialysis. Despite the increased risk of major bleeding in APX group, the WARF group had an intracranial bleeding event. This study is limited by sample size, but given the increased risk of major bleeding events with APX, caution should be exercised when APX is prescribed for patients on dialysis.

PL 1-5
P2Y12 ANTAGONIST SELECTION IN PATIENTS RECEIVING OUTPATIENT WARFARIN THERAPY AND ASSOCIATED OUTCOMES. Stephanie Kuhl, Jennifer Gass, Phillip Weeks, Memorial Hermann – Texas Medical Center, Houston, TX.

PURPOSE: To describe the differences in hospitalizations, bleeding events, and thrombotic outcomes of ST-elevation myocardial infarction patients discharged on triple antithrombotic therapy with clopidogrel versus ticagrelor.

METHODS: This was a retrospective observational cohort study including patients admitted to any Memorial Hermann Health System hospital from July 2012 through August 2016 for an ST-elevation myocardial infarction (STEMI) and discharged on triple therapy with aspirin, warfarin, and either clopidogrel or ticagrelor. Baseline demographics, past medical history, and primary outcomes were collected via electronic medical records. Patients were excluded if they received any other antithrombotic medications at discharge or were pregnant.

RESULTS: During the study period, 3562 patients were admitted with STEMI, and out of those 42 were identified who were discharged on triple therapy with clopidogrel and 9 patients identified who were discharged on triple therapy with ticagrelor. The primary outcome of 30-day rehospitalization occurred in 21.4% of patients in the clopidogrel group and 44.4% of patients in the ticagrelor group (p = 0.15). Hospitalization within 90 days was not different between clopidogrel and ticagrelor (28.6% vs 44.4% of patients; p = 0.35). The majority of hospitalizations in both groups were secondary to heart failure exacerbation, with only 3 total admissions for bleeding events.

CONCLUSION: In the current cohort of patients, there was no difference with regards to rehospitalizations and bleeding events between patients admitted with a STEMI and discharged on triple antithrombotic therapy with
clopidogrel versus ticagrelor. Due to the limited number of patients included in this interim analysis, a protocol expansion has been submitted to include not only patients admitted with STEMI but all patients undergoing percutaneous coronary intervention. Full data collection and analysis is pending institutional review board approval.

**IB – PHARMACY ADMINISTRATION & MANAGEMENT**

**PL I-6**

**IMPACT OF CYP3A4 AND P-gp INTERACTING MEDICATIONS ON CLINICAL OUTCOMES IN PATIENTS MANAGED ON RIVAROXABAN: AN OBSERVATIONAL STUDY.** Joseph A. Goble, Kiumars Zolfaghari, Stephanie Yu, Paul J Godley, Laurel Copeland, Gregory Dehmer, Jeffrey Michel, Baylor Scott & White Health, Temple, TX.

**PURPOSE:** Rivaroxaban has been identified as a substrate of the cytochrome P450 (CYP) 3A4 enzyme and the P-glycoprotein (P-gp) system. Concomitant interacting medications (CIM) that affect these mechanisms of drug metabolism may significantly affect rivaroxaban pharmacodynamics. Evidence is lacking to assess the real-world risk of bleed or thromboembolism (TE) arising from use of rivaroxaban with concomitant interacting medications (CIM). This study assessed the individual and additive risk of bleed/TE associated with CIM in patients managed on rivaroxaban therapy and determined the contribution of demographic and clinical covariates independent of CIMs to this risk.

**METHODS:** This was a retrospective review of claims merged with EMR data from 2011-2016. Patients were included if they had ≥1 prescription claim for rivaroxaban (index event) and continuous enrollment for ≥9 months pre- and post-index date to assess CIM use, bleed or TE occurring at least 3 days after prescription date of a CIM and/or rivaroxaban, and pre-index comorbidity. Covariates included age, gender, and prior-year diagnosis of hypertension, atrial fibrillation, hypercholesterolemia and other conditions in the Charlson Comorbidity Index. The primary endpoints were bleed and TE. Multivariable logistic regression assessed risk effects as odds ratios (OR) with their 95% confidence intervals (CI).

**RESULTS:** We identified 747 patients from January 2011 through December 2015 meeting the inclusion criteria. Half the patients were male (50%) with a mean age of 70.5 years and an average Charlson score of 1.4. Use of CIM (51% overall) included P-gp inhibitors (29%), CYP3A4/P-gp dual inhibitors (17%), CYP3A4 inducers (4%), PAIs (8%) and NSAIDs (10%). Major comorbidities included hypertension (55%), atrial fibrillation (54%), hypercholesterolemia (27%); 12% of patients had cancer. The rate of any bleed was 7% and of TE, 10%. In adjusted models, those with CYP3A4/P-gp inhibitors and PAIs were more likely to experience a bleed compared to non-users (OR=4.4, CI 2.2-8.9, p<.001; OR=4.4, CI 1.8-10.7, p<.001). No single CIM group was associated with lower rate of TE, but CIM users generally had lower rates of TE than non-users (7% vs. 13%, p=0.003). Hypertension (OR=2.1, CI 1.1-4.2, p=0.03) was a significant predictor of any bleed. Hypercholesterolemia (OR=1.98, CI 1.11-3.55, p=0.02) and atrial fibrillation (OR=0.14, CI 0.07-0.29, p<0.001) were identified as significant predictors of TE with opposite effects.

**CONCLUSION:** CYP3A4 and P-gp inhibitor use was common in patients on rivaroxaban in a central Texas health plan population, and was associated with higher likelihood of bleeding but lower likelihood of TE.

**PL I-7**

**ASSOCIATION BETWEEN PERFORMANCE OF PATIENT-CENTERED ACTIVITIES AND EMPLOYEE ENGAGEMENT IN HOSPITAL PHARMACISTS.** An Le, Joyce Tipton, Angela Ward, Kim Birther, Marc Fleming. Memorial Hermann Health System, Houston, TX.

**PURPOSE:** To determine the association between the frequency in which a pharmacist performs patient-centered activities and employee engagement. The secondary objective is to determine the correlation between patient-centered activities and the pharmacist’s perception of safety.

**METHODS:** This IRB-approved, multi-hospital, cross-sectional study will utilize a 30-item electronic questionnaire that will be emailed to frontline hospital pharmacists in the Houston, Texas area through convenience sampling. Descriptive statistics will be used to analyze all items collected and analysis of variance will be used to evaluate the relationship between performance of patient-centered clinical activities, employee engagement, and safety attitude of the pharmacists. An alpha of 0.05 will be considered as statically significant. Data will be analyzed using the Statistical Package for the Social Sciences (SPSS, Chicago, IL) statistical analysis software. Informed consent will be obtained prior to the initiation of the survey.

**RESULTS:** Survey responses are being collected and analyzed. Final results are pending.

**CONCLUSION:** Pending results.

**PL I-8**

**A SYSTEM-BASED QUALITY IMPROVEMENT FOCUS ON ACCURATE PATIENT WEIGHTS.** Alyssa Sinkov, Jason Trahan, Baylor Scott & White Health System, Dallas, TX.

**BACKGROUND:** The Institute for Safe Medication Practices released the Targeted Medication Safety Best Practices for Hospitals in 2014 which was later revised in 2016. The revision placed an emphasis upon the importance of measuring and documenting accurate patient weights to avoid significant medication errors. The best practice statement is two-fold. First, each patient should be weighed as soon as possible upon each encounter, avoiding the use of stated, estimated or historical weights. Second, patient weights should be measured and documented in metric units only.

**PURPOSE:** To design, implement, and sustain safe practices for taking and documenting patient weights in a large, not-for-profit health system in Texas.

**METHODS:** A representative sampling of operational, cultural, and practice data regarding the measurement and documentation of patient weights has been collected for departments and facilities throughout Baylor Scott & White
Health System through the use of a standardized survey tool. Upon the completion of data collection, an Ishikawa diagram will be utilized as a focus tool for root cause analysis. A multidisciplinary focus team, including pharmacy, nursing, physicians, supply chain, human factors engineering, and biomedical engineering, will be formed to prioritize changes to the current processes through the use of a failure modes and effect analysis (FMEA) matrix and assignment of risk priority numbers. Changes will be implemented through multiple Plan-Do-Study-Act (PDSA) cycles.

RESULTS: To be determined.
CONCLUSION: To be determined.

### II A – CRITICAL CARE

#### PL II-1

**ACHIEVING GOAL TEMPERATURE IN POST-CARDIAC ARREST PATIENTS INITIATED ON TARGETED TEMPERATURE MANAGEMENT IN THE EMERGENCY DEPARTMENT VERSUS INTENSIVE CARE UNIT.** Monica Lee, Heather Hartman, Jennifer Gass; Memorial Hermann Texas Medical Center, Houston, TX.

**PURPOSE:** To determine the difference in time to reach target temperature of 33±0.5°C in post-cardiac arrest patients initiated on targeted temperature management (TTM) in the Emergency Department (ED) versus initiation in an Intensive Care Unit (ICU).

**METHODS:** This is a single center, retrospective study comparing time to reach target temperature in patients initiated on TTM in the ED versus in an ICU. Data was collected manually via electronic medical record review. Time frames were calculated between the following sequence of events: admission/CPR event, TTM protocol order placement, initiation of physiological cooling, achievement of target temperature, and initiation of physiological rewarming. Time frames were reported as medians with interquartile ranges for continuous data with non-normalized distribution. The Mann-Whitney U test was utilized to compare time differences between groups initiated in the ED versus ICU.

**RESULTS:** A total of 153 patients were included in the study, with 67 patients initiated on TTM in the ED and 86 initiated an ICU. The median [IQR] time (hours) from admission/CPR event to initiation of physiological cooling in the ED and ICU were 5.0 [2.8, 8.1] and 5.6 [3.5, 8.9], respectively. The median time from TTM order placement to cooling initiation was 2.8 [1.2, 5.2] and 3.7 [1.8, 6.7], and the median time from TTM order placement to cooling initiation was 2.8 [1.2, 5.2] and 3.7 [1.8, 6.7], and the median time from admission/CPR event to achievement of target temperature was 7.9 [5.8, 13.5] in the ED and 8.2 [6.2, 12.5] in an ICU. Patients remained at target temperature for a median of 23.5 [15.0, 27.1] and 25.0 [14.4, 27.0] when initiated in the ED versus ICU, respectively. The in-hospital mortality rate was 53.7% in the ED and 59.3% in an ICU. No statistical differences were found between values.

**CONCLUSION:** Patients initiated on TTM in the ICU had a non-significant trend towards a longer time to reach target temperature that was potentially affected by delay in initiation physiological cooling after TTM protocol order placement.

#### PL II-2

**EVALUATION OF DIABETIC KETOACIDOSIS PROTOCOL IN ADULT PATIENTS AT MEMORIAL HERMANN- TEXAS MEDICAL CENTER.** Elizabeth M. Franco, Jennifer Cortes, Heather Hartman, Memorial Hermann-Texas Medical Center, Houston, TX.

**PURPOSE:** Diabetic ketoacidosis (DKA) is a severe, potentially fatal hyperglycemic crisis that can occur in both type 1 and type 2 diabetics. Due to the increase incidence of DKA and high costs associated with treatment and utilization of resources, it is important to ensure quick and adequate treatment. Two common insulin treatment
strategies involve initiating insulin with a bolus of 0.1 units/kg followed by an infusion of 0.1 units/kg/hr while the alternative is to initiate insulin without the bolus at a rate of 0.14 units/kg/hr. In August of 2013, Memorial Hermann-Texas Medical Center implemented a DKA protocol with these two strategies along with aggressive fluid administration in hopes of safely and effectively treating these patients. The aim of this study is to determine if implementation of the DKA protocol has resulted in earlier resolution of DKA compared to treatment before this standardized practice.

METHODS: Using data retrospectively collected from the institution’s electronic records, we evaluated all patients who presented with or developed DKA between October 2011–June 2013, for the pre-protocol group, and August 2015–August 2016, for the post-protocol group. Pre-protocol patients were identified by DKA diagnosis code and receipt of an insulin drip; post-protocol patients were identified by the “DKA Orders” order set.

RESULTS: Out of 508 patients identified, 168 met the inclusion criteria while 340 were excluded for reasons including not meeting DKA criteria, transferred from an outside facility, or not treated according to either of the order sets. Ninety-two patients were included in the pre-protocol group and 76 in the post-protocol group. No differences in gender between the pre-protocol and post-protocol group, men 57.6% vs. 43.3%, p = 0.06, respectively. There was also no difference in number of patients with type 1 diabetes, 50% vs. 56.9%, p = 0.12. As for the time to resolution of DKA, there was a significant difference in median duration between the two groups (median [IQR]) 16.4 hrs [10.83, 27.23] vs. 11.7 hrs [9.3, 18.28], p < 0.05. In regards to fluid resuscitation, there was a difference in total liters of fluids administered between the two groups 4.125 L [2.281, 7.00] vs. 3.4 L [2.0, 5.0] in the post-protocol group (p < 0.05). There was no difference in the number of patients who had appropriate continuous insulin infusion rates 30.4% vs. 40.8%, p = 0.16, pre and post-protocol respectively. Hypoglycemic events occurred in 26.1% of the pre-protocol group vs. 22.4% of the post-protocol, p = 0.57. Hypokalemic events occurred in 19.56% vs. 3.94%, pre and post-protocol group, respectively, p < 0.05.

CONCLUSION: Data collection is complete and complete data set analysis is pending. Interim data analysis shows that implementation of the DKA protocol has lead to quicker resolution of DKA.

PL II-3
EVALUATION OF EMPIRIC GRAM-NEGATIVE THERAPY IN PNEUMONIA TREATMENT OF CRITICALLY ILL PATIENTS. Steven Pass and Olga Shvarts. VA North Texas Health Care System and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, Texas.

PURPOSE: The primary objective of this study is to determine if combination Gram-negative empiric therapy containing fluoroquinolones in pneumonia patients affected ICU length of stay and mortality compared to non-fluoroquinolone-containing regimens. A secondary objective of this study is to assess if duration of empiric therapy affected length of stay and mortality, and if initial selection of antibiotics were appropriate based on patient-specific risk factors. Safety outcomes will examine if longer duration or fluoroquinolone use resulted in adverse effects, such as *Clostridium difficile* infections or QTc prolongation.

METHODS: This was a retrospective cohort study conducted in patients between the ages of 18 and 90 admitted to the ICU at the Dallas Veterans Affairs Medical Center (VAMC). The study included patients with suspected hospital-acquired pneumonia (HAP) or ventilator-associated pneumonia (VAP) who received at least one antibiotic agent covering gram-negative pathogens. Patient demographics collected included age, gender, race, weight, height, BMI, and comorbidities. Additionally, serial vitals, laboratory values and markers, as well as any available radiography and microbiological culture results were collected. For the analysis of antimicrobial selection, the medication name, dose, dosing interval, and duration of therapy was recorded. For patient outcomes analysis, the following data was collected: ICU and hospital length of stay, 30-day mortality, presence or absence of *Clostridium difficile* infection during hospital admission, and changes in QTc interval during antimicrobial therapy. *Clostridium difficile* infection development was defined as a positive toxin test after administration of antimicrobials for treatment of pneumonia.

RESULTS: Data collection and analysis currently in progress.

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

PL II-4
VITAMIN K IN CIRRHOTIC PATIENTS FOR PREVENTION OF HEMORRHAGE. 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 evaluate if the administration of vitamin K to ICU patients with elevated INR due to cirrhosis prevents bleeding events. Patients with cirrhosis have decreased procoagulant and anticoagulant factors, therefore putting the patient at risk for both bleeding and thrombotic events. Despite the lack of evidence, clinicians often administer vitamin K to cirrhotic patients with elevated INR in an attempt to decrease bleeding risk. While the current American Association for the Study of Liver Diseases guidelines for the management of acute liver failure recommends the use of subcutaneous vitamin K, recent studies found no difference in patient outcomes. To the authors’ knowledge there is currently no research that evaluates the use of vitamin K for prevention of bleeding events in patients with cirrhosis in the intensive care unit.

METHODS: Data was collected retrospectively using the institution’s Computerized Patient Record System (CPRS). Patients were included if they were 18-89 years old, admitted to the cardiopulmonary ICU, and had ICD 9 codes indicating a diagnosis of cirrhosis. Patients were excluded if they had hemorrhage on admission, transitioned to hospice care within 72 hours of admission, were on anticoagulation, had a history of liver transplant, or received prothrombin complex concentrate or plasma during study admission. Data collected included age, gender, past medical history, use of phytonadione, ICU length of stay, MELD score, APACHE II score, Child-
Pugh score, hemoglobin, and use of packed red blood cells. The outcomes will be assessed through student t-tests and Chi-squared tests. Additionally, univariate and multivariate analyses will be performed to identify factors that impact bleeding.

RESULTS: Pending completion of data collection.

CONCLUSION: Pending results.

PL II-5
CLEVIDIDINE VERSUS NICARDIPINE IN SPONTANEOUS INTRACRANIAL HEMORRHAGE.
Dana Boeck, Kelly Reveles, Colleen Barthol, University Health System, San Antonio, Texas.

BACKGROUND: Acute hypertension in the setting of an intracranial bleed is associated with greater hematoma expansion, neurological deterioration, and negative effects on functional outcomes and mortality. Currently, no guideline recommendations exist for a specific antihypertensive agent for hemodynamic control in spontaneous intracranial hemorrhage (sICH). A majority of literature in sICH surrounds use of nicardipine, a second generation dihydropyridine calcium channel blocker utilized as a continuous infusion. Recent literature has now provoked the use of clevidipine, a third generation dihydropyridine calcium channel blocker. Proposed advantages of clevidipine include quick onset and short duration of action, small volume of administration, and rapid titration parameters. The purpose of this study was to compare patient outcomes among sICH patients who received clevidipine versus nicardipine.

METHODS: This was a single-center, retrospective chart review of adult patients admitted to the neuroscience or medical intensive care units between September 1, 2013 and September 30, 2016. Patients who were initiated on nicardipine or clevidipine with a diagnosis of sICH were included in the study. Patients were excluded if they received either antihypertensive agent for <1 hour or if an egg or soy allergy was documented in the patient’s chart. The primary outcome was incidence of hematoma expansion. Secondary outcomes included time to blood pressure goal, intensive care unit and hospital length of stay, and safety endpoints including hypertriglyceridemia and rebound hypertension. Categorical outcomes were compared between groups using the chi-square test and continuous outcomes were compared using the Wilcoxon rank sum test.

RESULTS: A total of 28 patients met inclusion criteria: 14 in the nicardipine cohort and 14 in the clevidipine cohort. No significant differences were found at baseline between groups with the exception of patients with diagnosed dyslipidemia, where the clevidipine group had a significantly higher occurrence (4 vs 0; p=0.03). No significant differences were seen in disease specific severity scores at admission. Median systolic blood pressure (SBP) at admission was 184.5 mmHg and 196.5 mmHg for nicardipine and clevidipine, respectively, and no significant differences were seen in utilization of sedation or enteral antihypertensive medications. Incidence of hematoma expansion was not different between groups (p=1.0). Although time to SBP goal was significantly longer in the clevidipine cohort (102.5 minutes vs 45 minutes; p=0.01), the incidence of rebound hypertension was significantly less (0% vs 42.9%; p=0.005). No significant differences regarding length of stay or inhospital mortality were seen between groups.

CONCLUSION: Use of clevidipine for initial management of sICH did not reduce the incidence of hematoma expansion compared with nicardipine. Patients on clevidipine had significantly longer time to blood pressure goal, but also had a reduced incidence of rebound hypertension.

IIB – CRITICAL CARE

PL II-6
Efficacy and Safety of Standardized Sepsis Resuscitation Pathways in Patients with End Stage Renal Disease, Cirrhosis, and Congestive Heart Failure.

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. Early goal-directed therapy has been shown to improve survival in heterogeneous groups of patients with severe sepsis and septic shock and the 2016 Surviving Sepsis Campaign consensus guideline addresses the type and amount of crystalloid to use for specialized patient populations including end stage renal disease and congestive heart failure.

METHODS: This study is a retrospective, observational study including septic patients with hypotension and/or lactate greater than or equal to 4 mmol/L with pre-existing end stage renal disease, cirrhosis, or congestive heart failure. Patients included were those that were hospitalized between January 2015 and October 2016. Potential study patients were identified through an ICD-9, ICD-10, and sepsis order set utilization search. The primary outcome of this study is all-cause mortality. Secondary outcomes include intensive care unit and hospital lengths of stay 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: Out of 124 potential patients 82 have been reviewed where 25 met inclusion and 57 met exclusion criteria. Preliminary results show 60% of patients who were treated for severe sepsis and septic shock expired. Of those deceased, only 26.6% received a minimum of 30 mL/kg crystalloid fluid resuscitation. Among the survivors, 20% received a minimum of 30 mL/kg. Among the cirrhosis patients, only 1 out of 11 received the specialized fluid resuscitation of 1.5 grams/kg of 25% albumin with 30 mL/kg of normal saline.

CONCLUSION: Conclusion is pending upon completion of data analysis. The hypothesized outcomes will show there are outcome differences in patients with pre-existing
end stage renal disease, cirrhosis, or congestive heart failure receiving specialized fluid resuscitation strategies for severe sepsis and septic shock compared to non-protocolized therapy.

PL II-7

PURPOSE: Sepsis is a life-threatening organ dysfunction caused by a dysregulated host response to infection that has been associated with high morbidity and mortality in hospitalized patients. Sepsis was traditionally defined as the presence of infection with systemic inflammatory response syndrome (SIRS). A new scoring system was recently developed through a retrospective cohort study that better reflected the high mortality associated with sepsis. The new screening tool, quick Sequential (Sepsis-Related) Organ Failure Assessment (qSOFA), predicted mortality better than SIRS in non-ED/ICU patients. The purpose of this study is to determine the comparative sensitivity and specificity of qSOFA score and SIRS/acute organ dysfunction-based screening tools to detect non-ED/ICU patients with sepsis.

METHODS: This is a retrospective, single center, observational study of patients that tested positive for either of the two sepsis screening tools in the month of January 2017. Using data retrospectively collected from the institution’s electronic medical records, the new qSOFA-based screening tool was compared to our existing SIRS/acute organ dysfunction-based tool for detection of sepsis.

RESULTS: A total of 239 patients who triggered the sepsis alert using the qSOFA or SIRS/acute organ dysfunction-based screening tools were analyzed. An interim analysis of 122 patients who met the inclusion criteria was performed. The qSOFA tool had a higher specificity for detecting patients with sepsis, however the SIRS/acute organ dysfunction-based screening had a greater sensitivity.

CONCLUSION: Based on the interim results from this retrospective analysis, the qSOFA screening tool may be more specific but less sensitive than our existing SIRS/acute organ dysfunction-based tool for detection of sepsis. Further analysis will need to be performed to assess the comparative sensitivity and specificity of the two tools.

PL III-1
COST-EFFECTIVENESS ANALYSIS OF LIPID SCREENING AND TREATMENT IN YOUTH. Linda Chen, Karen Rascati, Catherine McNeal, Paul Godley, Baylor Scott & White Health, Temple, TX.

PURPOSE: The American Academy of Pediatrics (AAP) recommends universal lipid screening of all 9-11 and 17-21 year olds despite limited evidence on the harms and benefits of lipid screening in that population. The purpose of this study is to estimate the cost-effectiveness of lipid screening strategies and treatment in youth.

METHODS: A Markov model will be employed to compare two screening strategies, universal screening and selective screening, from a U.S. societal perspective. The Markov states will reflect the various treatment strategies (pharmacotherapy and non-pharmacotherapy) and their adverse events and effectiveness. Model probabilities will be derived from a large registry containing about 10 million youths over the last two decades and supplemented with published literature when necessary. Costs of screening include the costs of the blood draw and the lab test fee but will not include physician fees. Direct (i.e. drug costs, follow-up physician fees, hospitalizations, etc) and indirect medical costs (i.e. transportation costs) will be included and discounted at an annual rate. Effects will be decreases in LDL-c and morbidity/mortality. Outcomes will be reported as incremental cost-effectiveness ratio as $/decreases in LDL and $/quality adjusted life years (QALY). This study will use several willingness-to-pay thresholds between $50,000-100,000 US dollars. Sensitivity analysis will be conducted.

RESULTS: Results in progress.

CONCLUSION: Results from the analysis will help inform future lipid screening guidance as well as treatment strategies in the U.S. youth.

PL III-2
HEALTHCARE RESOURCE UTILIZATION FOR TYPE 2 DIABETES PATIENTS ON NEW-ANTIDIABETIC CLASSES COMPARED TO TRADITIONAL CLASSES IN CENTRAL TEXAS. Stephanie Yu; I-Chia Liao; Paul J. Godley; Ivy Delaney; Kelly Bell; Janelle Hardisty; Anthony Cryar, Baylor Scott & White Health, Temple, TX.

Purpose: According to the 2017 AACE/ACE Comprehensive Type 2 Diabetes (T2DM) Management Algorithm, new anti-diabetes classes (NAC: SGLT2i, GLP1-RA, or DPP4i) are preferred over more traditional anti-diabetes classes (TAC: SU, TZD, meglitinide) for dual therapy after initiation of metformin. Clinical trials suggest that NAC offer favorable effects on cardiovascular risk factors with non-inferior reductions in glycated hemoglobin (HbA1c) compared with TAC. This study evaluates the validity of this recommendation and whether there is a difference in healthcare utilization between patients on NAC compared with those on TAC.

Methods: This retrospective analysis of medical and pharmacy claims from the period 2013-2015 evaluated
patients >18 years old with ICD9 diagnosis of T2DM and use of TAC at least one year prior to first claim for a NAC (index date) or matched claim for a TAC for the index date +/- 14 days. The primary endpoint was inpatient, emergency department, and outpatient utilization one year post index date. Age, gender, Charlson comorbidity index (CCI), pre-index weight, pre-index hospitalizations, and pre-index combined costs were adjusted for in the model. Negative binomial regression assessed risk effects of over-dispersed count data as odds ratios (OR) with 95% confidence intervals (CI).

Results: A total of 122 NAC and 362 TAC eligible patients were included in the final analytical dataset. There were no statistically significant differences between NAC and TAC cohorts in baseline Diabetes Complication Severity Index results (1.15 vs. 1.09, p=0.72) and pre-index weight (100.2kg vs. 97.5kg, p=0.29). Patients in the NAC cohort utilized GLP-1RA (10.7%), SGLT-2i (18.0%), and DPP-4i (78.7%) as second or third-line therapy. Patients in the TAC cohort utilized SU (98.9%) and TZD (7.0%) as second or third-line therapy. In adjusted models, the NAC cohort was less likely to be hospitalized compared to the TAC cohort (OR=0.48, CI 0.23–0.99, p=0.047). However, all-cause outpatient and emergency department utilization post-index between NAC and TAC cohorts were comparable (p=0.29, p=0.78).

Conclusions: The results of this real-world study demonstrate that patients newly started on an NAC experienced a significantly greater reduction all-cause inpatient utilization compared to those on a TAC. (191)

PL III-3
COMPARISON OF PHARMACIST-IDENTIFIED PATIENTS VERSUS PROVIDER REFERRALS FOR POST-HOSPITAL DISCHARGE FOLLOW-UP BY TRANSITIONS OF CARE PHARMACISTS. Nicole Aniobi, Lauren Kirk, Claire Rodrigues, Mandy Burton, John Peter Smith Hospital Network, Fort Worth, TX.

Purpose: To evaluate the accuracy of referrals made by providers and compare characteristics between the pharmacist-identified group and the referral group.

Methods: This study was a retrospective chart review of patients who were contacted by a transitions of care clinical pharmacist (TOC PharmD) after discharge at JPS Health Network. Patients were selected either by self-identification by a TOC PharmD who met the following criteria: type 2 diabetes mellitus diagnosis, hemoglobin A1c greater than or equal to eight percent, with a LACE+ readmission score greater than 58, and discharged to home, or through a referral by a provider between November 2015 and March 2016. All patients 18 years of age or older that were discharged to home, selected through one of the two different methods, and contacted by a TOC PharmD during the given time period were included in the study. Patients who did not receive a phone call or were unable to be reached by the TOC PharmD after three attempts were not included in the study. The data was analyzed using descriptive statistics.

Results: Pending statistical analysis.

Conclusion: Pending.
IIIB – AMBULATORY CARE

PL III-6
CORRELATION BETWEEN ANTIDEPRESSANT DOSE OPTIMIZATION AND ACHIEVEMENT OF GLYCEMIC OR BLOOD PRESSURE CONTROL.
Catlin Grisham-Takac, Phillip Lai, Maaya Srinivasa, Lindsay Vasquez, Karen Rascati, CommUnityCare Health Centers and University of Texas at Austin College of Pharmacy, Austin, TX.

Purpose: Depression is becoming a recognized cause of disability globally, and if left untreated has proven to develop into a chronic and recurrent issue. Furthermore, patients with depression and other comorbidities, such as coronary artery disease and diabetes, have been found to have worse health-related outcomes. While a number of studies have investigated the correlation between improvement in depression and chronic disease, none have reported on achievement of target doses of antidepressant therapies. The objective of this study is to determine the influence of antidepressant dosing optimization on reducing hemoglobin A1c and blood pressure.

Methods: This study has been granted approval from the University of Texas at Austin and CommUnityCare Health Center’s institutional review boards. It is a retrospective, cohort study design and includes patients newly initiated on an antidepressant from January 2015 to September 2015. Patients must also have uncontrolled diabetes (hemoglobin A1c greater than 7 percent), hypertension (blood pressure greater than 140/90 mmHg) or both. Patients will be followed from initiation of antidepressant and for 12 months afterwards. Data collected will include demographic information, past medical history, encounter type and frequency, hemoglobin A1c, visit blood pressure, body mass index, patient health questionnaire scores, antihypertensive medications, antidiabetic medications, class of antidepressant, antidepressant dose and any dose changes. Primary outcome will be change in hemoglobin A1c and/or blood pressure at the end of study period in relation to achievement of antidepressant target dose, while controlling for baseline characteristics. Select secondary outcomes include percent of patients to reach target doses and correlation between goal achievement and improvement in depression, while controlling for baseline characteristics. Primary outcome will be assessed through the use of a linear regression and secondary outcomes by using logistic regression. Significance level will be assigned as p value less than 0.05. Patient information will be released only to reviewers and will be de-identified at the earliest opportunity.

Results: Pending
Conclusion: Pending

PL III-7
IMPACT OF PHYSICIAN-PHARMACIST CO-VISITS AT A PRIMARY CARE CLINIC IN PATIENTS WITH UNCONTROLLED DIABETES.
Jasmine Peterson, PharmD; April Hinds, PharmD; Aida Garza, PharmD; Jamie Barner, Ph.D.; Lucas Hill, PharmD; Michelle Nguyen, PharmD; Phillip Lai, PharmD; Tyler Guns, PharmD. University of Texas at Austin and CommUnityCare Federally Qualified Health Centers, Austin TX.

Purpose: The patient-centered medical home (PCMH) is a new model of primary care delivery that has been implemented in many outpatient settings. One type of PCMH is the physician-pharmacist collaborative management (PPCM) model. Studies have shown that PPCM models have made a positive impact on patient care and safe medication use, especially among patients with uncontrolled diabetes. To improve efficiency of healthcare delivery within CommUnityCare (CUC), the PPCM model was implemented in 2013 through coordinated physician-pharmacist co-visits. Co-visits typically involve the pharmacist interviewing the patient prior to the physician. This process allows the physician more time to dedicate to the diagnostic and treatment selection process. Common pharmacist interventions conducted during these visits include providing education, medication management, and ensuring adherence to treatment guidelines. The purpose of this study is to evaluate the impact of physician-pharmacist co-visits on clinical outcomes among patients with uncontrolled diabetes.

Methods: This retrospective multi-center cohort study includes adults (18 years or older) with uncontrolled Type 1 or Type 2 diabetes (hemoglobin A1c (HbA1c) of 8 percent or greater) who were seen at CUC between 1/1/13 and 10/1/16. Cohorts include an intervention group (at least 2 co-visits) or usual care group (no co-visits, but at least 1 physician visit). The primary clinical outcome is mean change in HbA1c from baseline (within 1 year prior to the initial co-visit/physician visit) to follow-up (3 to 6 months post co-visit/physician visit). Secondary outcomes include mean change in lipids, blood pressure levels, and body mass index; as well as adherence to American Diabetes Association (ADA) Standards of Medical Care (documented immunizations, assessment of albuminuria, and use of appropriate preventative medications). To assess changes from baseline to follow-up between the intervention and usual care groups, inferential statistics will be used. Chi-square or Fisher’s exact tests will be used for categorical variables and Student’s t-tests and Mann Whitney-U tests will be used for continuous/ordinal variables. The significance level will be a p-value less than 0.05.

Results: N/A
Conclusion: N/A
PL III-8
EFFECTS OF DAILY VS TWICE DAILY DOZING OF ATENOLOL ON BLOOD PRESSURE. Elaine Lo, Meredith A. Sigler, Krystal L. Edwards, Kevin C. Kelly, Veterans Affairs North Texas Health Care System and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, TX.

PURPOSE. To investigate the change in blood pressure over two years after patients were initiated on atenolol and compare patients dosed daily versus twice daily. Secondary endpoints included the following: rates of discontinuation or addition of blood pressure medications due to ineffectiveness, rates of discontinuation or addition of blood pressure medications due to intolerance, time to discontinuation or addition of blood pressure medications due to ineffectiveness, time to discontinuation or addition of blood pressure medications due to intolerance, rates of adverse effects, incidence of hypertensive urgency, and incidence of hypertensive emergency.

METHODS. This retrospective cohort study is being conducted at the Dallas VA Medical Center. Patients were included in the study if they were between 18-89 years old, diagnosed with hypertension by ICD 9 or ICD 10 codes and received either once daily or twice daily dosing of atenolol for cardiovascular reasons for at least one month. 300 patients were included in the study, with 150 patients in the once daily dosing arm and the rest in the twice daily dosing arm. Blood pressure was recorded at the time of initiation of atenolol, the first follow up visit after initiation, and the final visit, defined as 2 years after initiation of therapy, when additional blood pressure medication was added, or when atenolol was discontinued.

RESULTS. Retrospective data collection is ongoing. CONCLUSION. Conclusions to be presented following data collection.

PL III-9
ENOXAPARIN BRIDGING: ONCE VS TWICE DAILY. Ryan Hadley, Lisa Chastain, Kevin Kelly, Christyn Mullen-Lee, VA North Texas Health Care System AND Texas Tech University Health Sciences Center, Dallas, TX.

PURPOSE: Primary objective is to compare the effects on patients achieving A1c goal <7% when prescribed twice daily dosing of detemir vs glargine. Secondary endpoints will compare the time it takes for patients to achieve goals, total daily dose (TDD) of insulin, percentage of TDD that is basal, average A1c reduction after initiation on BID insulin, direct cost of DM supplies, and weight changes.

METHODS: A retrospective chart review study conducted at the VANTHCS between 1/1/2011 to 10/31/2016 using computerized patient record system (CPRS) and VISTA. All patients must be admitted to the hospital and have been prescribed enoxaparin within 45 days of admission. Patient age, weight, height, BMI, past medical history, labs (INR, Hgb, platelets), and concurrent medications will be collected.

RESULTS: Analysis in progress.

CONCLUSION: Pending

PL IV-1
RENAI TRANSPLANT PATIENT OUTCOMES FOLLOWING PLASMAPHERESIS, THYMoglobulin, AND RITUXIMAB INDUCTION FOR HIGH RISK DSA-POSITIVE RECIPIENTS. Elizabeth M. Lessmann, Mozhgon Moaddab, Melissa Manson, Adith Ram, Ronald H Kerman and Peter Jindra, Pharmacy, CHI St. Luke's Health Baylor St. Luke's Medical Center, Houston, Texas, United States, Immune Evaluation Laboratory, Baylor College of Medicine, Houston, Texas, United States.

PURPOSE: Kidney transplantation is associated with improved survival and quality of life relative to dialysis for patients with end-stage renal disease (ESRD). Patients who are highly human leukocyte antigen (HLA)-sensitized are among the most vulnerable populations awaiting kidney transplantation. The recent UNOS organ allocation policy change has enhanced access to transplantation for patients who are highly sensitized. At our institution, we have implemented guidelines for the management of donor specific antibody (DSA) positive patients which includes plasmapheresis, thymoglobulin, and rituximab induction. The purpose of this study was to assess our DSA protocol on sensitized patient outcomes.

METHODS: This was a single center, retrospective data review of 150 patients who underwent kidney transplantation at our center between January 2014 and June 2016.

RESULTS: Of the kidney transplants performed, 34.7% (52/150) received the DSA protocol. Of patients receiving the DSA protocol, 5 were virtual crossmatch (XM) and 3 flow B cell XM positive. All were flow T cell XM and cytotoxic XM negative. Recipients averaged a class I PRA of 51% and 36% for class II. Donor specific anti-HLA antibodies had an average class I MFI of 2773 and class II MFI of 4417. Overall, 16.7% (25/150) of recipients had biopsy proven rejection. Of the recipients who received the DSA protocol, 15.4% had biopsy proven rejection with the majority (62.5%) diagnosed with acute cellular rejection (ACR), 25% of recipients had a combined ACR and antibody mediated rejection (AMR), and 12.5% had AMR alone. Stable serum creatinine (SCr) was observed in both the DSA positive group with a median SCr at 6 months 1.52 (IQR 1.25-1.83) and 1 year 2.21 (IQR 1.35-2.79) and DSA negative group with a median SCr at 6 months 1.57 (IQR 1.12-1.91) and 1 year 1.59 (IQR 1.36-1.96). Of the 5 patients that suffered graft loss, 1 was in the DSA positive group and also experienced one documented episode of ACR.

CONCLUSION: These data suggest induction with plasmapheresis, thymoglobulin and rituximab leads to superior outcomes in sensitized patients with low level anti-HLA antibodies. Based on our induction protocol and maintenance immunosuppression strategy, having low level anti-HLA antibodies should not be a contraindication to transplant.
Purpose: Direct oral anticoagulants (DOAC) and calcineurin inhibitors (CNI) are both substrates of CYP 3A metabolism; therefore, the purpose of this study is to assess the incidence of major bleeding in solid organ transplant (SOT) recipients taking CNI with a DOAC compared to patients taking warfarin.

Methods: A single center retrospective, observational chart review was performed in SOT recipients taking a CNI for immunosuppression, who required oral anticoagulation for DVT, PE, or nonvalvular atrial fibrillation between May 2013 and November 2016. Patients were stratified into two groups: those taking a CNI and a DOAC versus those taking a CNI and warfarin. The primary endpoint was the incidence of major bleeding in a critical site, defined as a decrease in the hemoglobin of ≥ 2 g/dL, requiring transfusion of at least two units of blood. Patients were excluded if they were <18 years old, taking a DOAC for off-label use, taking warfarin for an indication that a DOAC does not have an indication for, had valvular atrial fibrillation, baseline platelet count < 50,000/microliter, baseline INR > 1.5, or warfarin goal INR other than 2-3.

Results: The primary endpoint was reached in 10.8% (4/37) of patients in the DOAC group and 5% (2/40) of patients in the warfarin group. Using a fisher's exact test, no statistical difference was found between the two groups (P=0.419). The primary site of bleeding in the 4 DOAC patients was pericardial (2/4), gastrointestinal (1/4), and genitourinary (1/4). In the warfarin group, 1 patient had a retroperitoneal bleed and 1 patient had a genitourinary bleed. In 50% of patients who met the primary outcome, major bleeding occurred after allograft biopsies. Demographics consisted of mainly Caucasian males (61%), heart transplants (43.8%), and the CNI tacrolimus (97.4%). DOACs used were as follows: apixaban (59.5%) and rivaroxaban (40.5%), with a dose reduction in 48.6%. Of the 48.6% DOAC dose reductions, 16.2% were done following manufacturer recommendations.

Conclusion: In this retrospective chart review, we found no statistical difference in rates of major bleeding between SOT recipients taking a DOAC versus warfarin concomitantly with a CNI. It appears that the DOAC cohort did not experience excessive anticoagulation due to competition of drug metabolism with a CNI. However, further research is warranted to support this conclusion.

Purpose: Evaluate the utility of surveillance biopsies and monitoring 6 months post-transplant.

Methods: A retrospective single center chart review of pediatric renal transplant recipients from 01/2011–10/2015 was conducted. Patients ≤18 years of age who received a renal transplant between the study dates were included and divided into two groups: patients who underwent surveillance biopsies (SB arm) and patients who did not (control arm). Mean peak estimated glomerular filtration rate (eGFR) was determined at 3 months post-transplant. Peak eGFR, mean percent change in eGFR, incidence of rejection, and infection-related hospitalizations were compared between the two groups 12 months post-transplant.

Results: The SB arm (n=16) and the control arm (n=18) had comparable baseline characteristics. There was no significant difference between the SB and control arms with regard to percent change in eGFR from peak to 12 months post-transplant (-22.9±15.7 in the SB arm vs. -13.2±16.6 in the control arm, p = 0.094). There was no significant difference in the proportion of patients that experienced a decrease in eGFR ≥ 10 mL/min/1.73 m² (75.0% in the SB arm vs. 47.1% in the control arm, P = 0.157). Additionally, there was no significant difference in the incidence of acute rejection (18.8% in SB arm vs. 5.6% in the control arm, P = 0.323), as well as incidence of infections requiring hospitalization (12.5% in SB arm vs. 11.1% in control arm, P = 1.00). Of the 16 surveillance biopsies performed, 6 patients had borderline rejection (3 received treatment), 9 had tacrolimus-associated toxicity, and 1 had normal histology. No patients experienced any biopsy-related complications, but a majority of patients (87.5%) required a hospital stay ≥ 24 hours for the biopsy.

Conclusions: The use of surveillance biopsies in pediatric renal transplant recipients was not associated with superior renal function at 12 months post-transplant compared to controls. Despite the low-risk of biopsy complications and infections, a majority of patients who received surveillance biopsies had a hospital length of stay ≥ 24 hours, which has significant cost implications. This analysis questions the short-term benefit of surveillance biopsies in pediatric kidney transplant recipients, but warrants long-term follow-up to determine the impact of actionable findings on surveillance biopsy.
insulin pen in a hospital setting; however, few studies have been conducted regarding the impact of switching from a patient-specific insulin vial to a community insulin vial. The primary objective of this study is to assess the impact of an automated dispensing cabinet-regulated community insulin vial pilot program on inventory costs.

**METHODS:** An automated dispensing cabinet-regulated community insulin vial pilot program will be implemented in two nursing units of Ben Taub Hospital. This pilot program will target regular insulin, NPH insulin, and insulin detemir in a designated surgical unit and a medical intensive care unit (MICU). Before implementation, nursing and pharmacy staff will receive education regarding the pilot program workflow. The primary endpoint of this study is the impact on inventory cost which will be calculated by multiplying insulin utilization before and after implementation by the institution’s acquisition cost. The secondary endpoints include the impact on the average number of insulin vials per patient, the average number of medication messages sent to pharmacy, and the average employee satisfaction survey score for nursing and pharmacy. In order to measure employee satisfaction regarding the insulin administration and dispensing process, respective nursing and pharmacy staff will voluntarily complete anonymous pre-and post-implementation surveys using a 5-point Likert scale. All other metrics will be analyzed over a 3-month period before and after implementation. The student’s t-test will be used to compare continuous data and the chi-square test will be used to compare categorical data.

**RESULTS:** Pending data analysis

**CONCLUSION:** N/A

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**PL IV-5**


**PURPOSE:** To assess the impact of an electronic health record (EHR) consult order to improve the discharge counseling capture rate, specifically in high risk patients (LACE ≥ 9). In addition, this study will quantify the number of clinical interventions documented by pharmacists after discharge counseling and assess the number of patients who received counseling on five or more new medications.

**METHODS:** This is a quasi-experimental quality improvement study to determine the impact of implementing an EHR discharge counseling consult order in a large, quaternary academic medical center. Patients have been divided into two groups: Group A (January 1 to March 31, 2016) – pre-implementation of consult order and Group B (January 1 to March 31, 2017) – post-implementation of consult order. Patient adjusted days will be used to normalize the data due to varying patient census within the hospital. The number of patients discharge counseled and respective clinical interventions discovered through discharge counseling will be quantified and evaluated throughout the study.

**RESULTS:** An interim analysis of 649 patients has been performed for January 1 to March 31, 2016 and January 1 to February 25, 2017. The two study arms (Group A, n=397; Group B, n=252) each had an average LACE score of 12. The percentages of patients who received discharge counseling in Group A and B were 4.5% and 40.5%, respectively. From the patients who received counseling from a pharmacist in Group A and Group B, 38.5% and 62.7% of patients respectively had five or more new medications on their discharge list. Group A had 241 patients (60.7%) with a LACE score of ≥ 9 compared to Group B which had 147 patients (58.3%). Out of these high risk patients, pharmacists counseled 5.4% of patients in Group A and 43.5% of patients in Group B. In Group B, 28.6% of patients received a consult order and pharmacists addressed 72.2% of these consults. From the consults addressed by pharmacists in Group B, 71.2% of patients were considered high risk for readmission. During discharge counseling, pharmacists discovered 102 additional interventions necessary which includes anticoagulation adjustments (35.3%) and identification of duplicate therapies (3.9%).

**CONCLUSION:** Based on the interim data, the EHR consult order allows pharmacists to further organize their workflow and has amplified the awareness of discharge counseling in order to increase the discharge counseling capture rate.

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**IVB – GERIATRICS & ONCOLOGY & EMERGENCY MEDICINE**

**PL IV-6**

**SUBCLINICAL SEROTONIN SYNDROME AND THE RISK OF ANTI-PSYCHOTIC PRESCRIBING IN THE ELDERLY.** Amie Blaszczyk, Jordan Light. Texas Tech University Health Sciences Center School of Pharmacy, Dallas, TX.

**PURPOSE:** The objective of this study is to evaluate whether drugs with serotonergic activity, alone or in combination with each other, may be a risk factor for increased antipsychotic prescribing among nursing home residents. The secondary objective is to evaluate whether drugs with serotonergic activity, alone or in combination with each other, may be a risk factor for increased antipsychotic prescribing among nursing home residents with dementia or Alzheimer’s disease.

**METHODS:** This was a cross-sectional, snapshot, retrospective chart review of nursing home patients in Texas. Patients were included if they were Senior Care Centers long-stay nursing home residents and had dispensing records through MBS pharmacy from April 1, 2016 to April 30, 2016. Prescription records were available for the entire month of April for each patient and included medication name, strength, route, and quantity. Medication lists will be assessed to review serotonergic modulating medications, as well as antipsychotic agents specifically. Patient demographics were obtained from a database where age, gender, ethnicity and past medical history were recorded. In addition, serotonergic agents will be categorized based on their therapeutic mechanism of action. Patients were excluded if they were Medicare Part A stay patients, had a diagnosis of schizoaffective disorder, Tourette’s, Huntington’s disease, or bipolar disorder. Patients were also excluded if they had an incomplete
medical record, including the medication administration record or diagnoses not being recorded.

**RESULTS:** Data collection and analysis currently in progress.

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

**PL IV-7**

**EVALUATION OF CIPROFLOXACIN PROPHYLAXIS IN PATIENTS RECEIVING HEMATOPOIETIC STEM CELL TRANSPLANTS.**

Kerry Anne Rambaran, Charles F. Seifert, Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

**PURPOSE:** Infections, more so bacteremia, is the leading cause of mortality in patients undergoing hematopoietic stem cell transplantation (HSCT) despite early aggressive antimicrobial therapy. The American Society of Health System Pharmacists, Infectious Disease Society of America guidelines for opportunistic infections in stem cell transplant recipients and the American Society for Blood and Marrow Transplantation state that antimicrobial prophylaxis with fluoroquinolones, specifically levofloxacin should be strongly considered in adult HSCT patients whose neutropenic periods are more than seven days and should be discontinued once the neutropenic period has dissipated, unless a compelling indication is present. This study is designed to evaluate the impact of the prophylactic use of ciprofloxacin versus levofloxacin in HSCT recipients.

**METHODS:** Using data retrospectively collected from UMC’s electronic records, we compared the effectiveness of using ciprofloxacin as prophylaxis compared to levofloxacin in patients receiving a HSCT from January 2005 to September 2016. Patients were identified using ICD-9 and ICD-10 codes for HSCT. The outcomes include the frequency of bacteremia, the incidence of neutropenic fever and duration of fever and hospitalization when ciprofloxacin is used as prophylaxis when compared to levofloxacin. To examine the predictive factors of mortality, fever and ciprofloxacin use multivariable logistic and linear regression models were used respectively.

**RESULTS:** The patient population (N=151) was predominantly male (93 vs 58) and the average age was 55.9 ± 15.6 years. There were 108 patients undergoing autologous HSCT compared to 43 undergoing Allogenic HSCT. Significantly fewer patients who received levofloxacin (11/43, 25.6%) developed neutropenic fever compared to patients who received ciprofloxacin (61/108, 56.5%, p = 0.0006). Also there were significantly more positive blood cultures in the ciprofloxacin group (36/108, 33.3%) compared to the levofloxacin group (4/43, 9.3%), all of which were gram positive organisms (p = 0.0025). Of note there were more deaths associated with autologous HSCT (58) versus allogenic HSCT (31).

**CONCLUSION:** Prophylaxis with levofloxacin was associated with lower incidence of febrile neutropenia and gram positive bacteremia when compared to ciprofloxacin in HSCT patient.

**DISCLOSURE:** The authors have nothing to disclose.

**PL IV-8**

**COMPARISON OF OUTPATIENT COMMUNITY-ACQUIRED PNEUMONIA (CAP) TREATMENT REGIMENS (MACROLIDE MONOTHERAPY VS. OTHER REGIMENS) ON SECONDARY EMERGENCY DEPARTMENT (ED) VISITS, HOSPITALIZATIONS, AND NEW PRESCRIPTIONS FOR CAP.**

Ellen Robinson, Darrel W. Hughes, Amanda L. Fowler, Russell T. Attridge Department of Pharmacy, University Hospital, University of Texas Health Science Center, San Antonio, Texas.

**BACKGROUND:** Streptococcus pneumoniae is the primary pathogen responsible for CAP. Guideline recommendations for first line outpatient CAP treatment vary between macrolide monotherapy and β-lactam monotherapy. However, Infectious Disease Society of America (IDSA) recommends a macrolide + β-lactam combination for areas with macrolide resistance ≥25%. No current literature investigates effectiveness of macrolide monotherapy for outpatient CAP in areas of high resistance.

**OBJECTIVE:** In a hospital with high S. pneumoniae macrolide resistance, compare macrolide monotherapy to other guideline-based outpatient CAP regimens on composite rates of secondary ED visits, hospitalizations, and new CAP therapy prescriptions.

**METHODS:** Using electronic records, we retrospectively identified individuals treated as outpatients for mild to moderate CAP (PORT Score of I, II, or III). Patients who met inclusion and exclusion criteria were assigned to one of two groups, macrolide monotherapy and all other guideline concordant therapy. We then analyzed patients for secondary ED visits, hospitalizations, new antibiotic CAP prescriptions, *Clostridium difficile* infections, and sudden cardiac death.

**RESULTS:** There were 111 patients included in the macrolide monotherapy group (MM) and 41 patients included in guideline concordant therapy group (GT). At baseline, 91 patients (90.1%) in MM and 34 patients (82.9%) in the GT group had a class I or II PORT score. For the composite primary endpoint, 23 patients (22.8%) in the MM group experienced a composite event compared with 10 patients (24.4%) in the GT group [p=0.8295]. In the MM group, 23 patients (23.7%) had a secondary presentation for unresolved CAP compared with 10 patients (24.4%) in the GT group [p=0.83]. In the MM group, 4 patients (4.0%) were hospitalized for CAP compared with 4 patients (9.8%) in the GT group [p=0.23]. In the MM group, 13 patients (12.7%) were given new antibiotics for their CAP compared with 5 patients (12.2%) in the GT group [p=1.0]. There were no reported cases of sudden cardiac death or antibiotic-associated *Clostridium difficile* infections in either group.

**CONCLUSION:** There was no significant difference between macrolide monotherapy and other guideline concordant therapies in regards to secondary ED visits, hospitalizations, or new CAP antibiotic prescriptions in patients treated for outpatient CAP in an area of high macrolide S. pneumoniae resistance.

**PL IV-9**

Open
VA – INFECTIOUS DISEASE/HIV

PL V-1
PREDICTIVE VALUE OF NASAL SCREENING IN DETERMINING THE PRESENCE OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS AS A PATHOGEN IN PNEUMONIA. Jeena Jacob, Matthew P Crotty, Methodist Dallas Medical Center, Dallas, Texas.

PURPOSE: To determine the predictive value of nasal screening for methicillin-resistant Staphylococcus aureus (MRSA) as a pathogen in pneumonia at a tertiary community teaching hospital. This institution had an active surveillance program as a part of Infection Prevention to identify multiresistant organisms from 2012 to 2015 on all patients that met one or more criteria; these criteria include: hospitalized for two or more nights in the past 30 days, transfer from a nursing home, extended care, long term care, or rehabilitation facility, or patients with a pressure ulcer or draining wound. Results of the surveillance nares screen could have predictive potential for MRSA in pneumonia patients and could be utilized in the future to tailor empiric antibiotic regimens.

METHODS: Data was retrospectively collected from electronic medical records on all patients admitted from August 1, 2012-December 1, 2015. Patients were included if a MRSA nasopharyngeal swab was obtained within 48 hours of admission and a lower respiratory specimen was obtained during hospitalization. Data was analyzed to calculate the sensitivity, specificity, positive-predictive value, and negative-predictive value of MRSA nares screening. Furthermore, the use of empiric anti-MRSA agents selected and the duration of therapy was evaluated.

RESULTS: A total of 298 patients were included in this study. Two hundred fifty-three patients had negative MRSA nares and 45 patients had positive MRSA nares. Chest imaging was consistent with pneumonia in 77.5% of all patients (n=227); 84.4% of patients with positive nares (n=38) and 74.7% of patients with negative nares (n=189) had imaging consistent with pneumonia. Three patients with negative nares had a positive respiratory culture for MRSA. Ten patients with positive nares had a corresponding positive respiratory culture for MRSA. The MRSA nares screen demonstrated a sensitivity of 76.9% and a specificity of 87.7%, with a positive-predictive value of 22.2% and a negative-predictive value of 98.8%. Vancomycin was used empirically in 228/298 patients (76.5%) and linezolid was used in 55/298 patients (18.5%). Of the 253 patients with negative MRSA nares, vancomycin was continued beyond 48 hours in 52.9% of patients (n=134) and linezolid was continued beyond 48 hours in 13.4% of patients (n=34). The median duration of therapy was 4 days (IQR, 2-7).

CONCLUSION: In patients with pneumonia at this community hospital, the MRSA nares screening has a high negative-predictive value but a poor positive-predictive value. A negative nares result can be used to guide de-escalation of empiric antibiotics from regimens that include an anti-MRSA agent such as vancomycin or linezolid.

PL V-2
ASSESSING TREATMENT OUTCOMES WHEN SWITCHING HIV-1 INFECTED PATIENTS FROM VARIOUS ANTIRETROVIRAL THERAPY (ART) REGIMENS TO DARUNAVIR/COBICISTAT MONOTHERAPY. Alexa Vyain, Rustin Crutchley, Anne Le, Joseph Gathe Jr., Carl Mayberry, University of Houston College of Pharmacy, Houston, Texas.

PURPOSE: Protease inhibitor (PI) monotherapy for treatment of HIV-1 infection has been shown as an effective alternative to traditional combination ART in already virologically suppressed individuals. The newly introduced one tablet, once-daily formulation of the PI darunavir paired with the pharmacokinetic enhancer cobicistat (DRV/c) recently gained FDA approval based on previous studies showing bioequivalence to once daily ritonavir-boosted darunavir. No clinical studies have evaluated treatment simplification from DRV/c monotherapy in the United States. The primary objective of this study is to assess the proportion of patients who achieve or maintain virologic suppression after 24 weeks when switching from a previous ART regimen to DRV/c monotherapy.

METHODS: This study was approved by the University of Houston Institutional Review Board. Adult HIV-infected patients at an HIV outpatient clinic were switched to DRV/c monotherapy from a previous ART regimen containing either combination ART or PI monotherapy with a different PI/pharmacokinetic enhancer combination (for example-lopinavir/ritonavir). Eligible patients included those with both detectable and undetectable HIV viral loads prior to switching. Patients with any prior major PI mutations to darunavir were excluded from analysis in this retrospective study. Baseline laboratory parameter data at the time/prior to switch including HIV treatment surrogate markers (CD4, CD4% and HIV viral load), lipid parameters (triglycerides, high-density lipoprotein (HDL), low-density lipoprotein (LDL) and total cholesterol) and renal parameters (serum creatinine (SCr) and eGFR (estimated glomerular filtration rate)) were collected as well as at 12, 24 and 48 weeks after switch to DRV/c monotherapy. Statistical tests including Pearson Chi-square and Student’s t-test will be used for categorical variables and continuous variables, respectively.

RESULTS: An analysis of 79 patients is currently underway.

CONCLUSION: N/A

PL V-3
EVALUATION OF PROPHYLACTIC ANTIBIOTIC REGIMENS ON RECURRENTNESS AND MORTALITY IN SPONTANEOUS BACTERIAL PERITONITIS. Shelley S. Glaess1,2, Rebecca L. Attridge1,3, Rebecca L. Brady1,2, Russell T. Attridge1,2 1University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX, 2 South Texas Veterans Health Care System, Audie L. Murphy Division, San Antonio, TX, San Antonio TX, 3 The University of Texas Health Science Center at San Antonio, 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 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. The purpose of this study is to compare SBP recurrence and mortality at 90-days and one-year in patients with cirrhosis and a history of SBP who received daily vs. once-weekly antibiotic prophylaxis.

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. Eligible patients had peritoneal fluid polymorphonuclear (PMN) leukocyte counts ≥250 cells/mm³ or a positive peritoneal fluid culture. Initial secondary SBP prophylaxis regimens were used to stratify patients into daily or once-weekly groups. 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.

RESULTS: Of 791 patients with peritoneal fluid samples, 86% met inclusion criteria. Most (89.5%) were male; median age was 59 years (IQR 55-64). Once-weekly antibiotic prophylaxis regimens were similar to daily regimens (36 vs. 34); 16 patients received no prophylaxis. Most patients (65.1%) received either daily or weekly ciprofloxacin. Overall 90-day and one-year mortality were 31.4% and 64.0%. Daily and weekly regimens had similar rates of recurrence at 90-days (19.4% vs. 14.7%, p=0.276) and one-year (33.3% vs. 26.5%, p=0.392). Similarly, there were no differences in mortality between daily and weekly regimens at one-year (67.6% vs. 63.9%, p=0.110); however, daily regimens were associated with increased mortality at 90-days (32.4% vs. 30.6%, p=0.026). Patients who received no prophylaxis had similar rates of 90-day (31.3%) and one-year mortality (56.3%) to both daily and once-weekly groups.

CONCLUSION: When comparing daily vs. weekly SBP prophylaxis, both regimens resulted in similar rates of SBP recurrence and mortality. Daily regimens may be associated with increased rates of 90-day mortality, although clinical relevance is uncertain.

PL V-4
EVALUATION OF ANTIBIOTIC UTILIZATION IN AN EMERGENCY DEPARTMENT POST IMPLEMENTATION OF AN ANTIMICROBIAL STEWARDSHIP PROGRAM. Megan Geurds, Chris Tawwater, Jennifer Grelle, Texas Tech University Health Sciences Center School of Pharmacy, Abilene, Texas.

Background: 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 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 was a retrospective quasi-experimental design, evaluating the impact of pharmacist-guided follow-up of culture and antibiotic therapy versus traditional follow-up after discharge from an ED. Patients were included if they were discharged from the ED from February 1, 2015 to July 31, 2015 (traditional) and February 1, 2016 to July 31, 2016 (pharmacist-guided) with a positive culture after discharge. Patients were identified by searching the laboratory database for subjects with positive cultures collected in the ED and emergency outpatient (EOP). In the pharmacist-guided group, work flow consisted of ED culture surveillance by ASP pharmacists and follow-up of cultures with discordant antibiotic therapy. The primary outcome of the study was time to change of an antibiotic(s) in subjects with positive culture results with inadequate antibiotic therapy. Secondary outcomes included time to culture reviews, appropriateness of antimicrobial therapy according to IDSA guidelines based on drug and regimen as a whole, appropriateness of therapy based on renal function, and 30 day readmissions.

Result: Over the nine month pharmacy facilitated period there were 392 patients with 26.3% with a documented intervention compared to 398 patients in the traditional group with 6.28% having a documented intervention (p<0.0001). Time from inappropriate antibiotic therapy decreased from an average of 11.29 days in the traditional group to 4.44 days in the pharmacist facilitated group (p<0.0001). Time to culture review decreased in the pharmacist facilitated group from 13.9 to 3.27 days (p<0.0001). Appropriateness of drug therapy increased in the pharmacist facilitated group from 85.7% to 91.80% (p=0.047). The rate of combined ED revisits and hospital readmissions was similar between each group (p=0.367)."

Conclusion: Pharmacist involvement in the management of positive culture follow-up in the ED was associated with a significant decrease in the time to appropriate therapy in patients discharged with discordant therapy, higher rates of appropriate antibiotic therapy, shorter appropriate durations of antibiotic therapy, and a faster time to culture review. Inclusion of an appropriately trained pharmacist in the management of positive cultures can improve patient outcomes and potentially decrease antibiotic resistance patterns.

PL V-5
CEFEPIE WITH OR WITHOUT METRONIDAZOLE VERSUS PIPERACILLIN/TAZOBACTAM FOR THE TREATMENT OF INTRA-ABDOMINAL INFECTIONS CAUSED BY POTENTIAL AMPC BETA-LACTAMASE PRODUCING ORGANISMS. Stephanie Chang, Mitchell Daley, Dusten Rose, Manasa Murthy, Emily Hodge, Seton Healthcare Family, Austin, Texas.

Purpose: A wide range of Enterobacteriaceae produce AmpC beta-lactamases, which confer resistance to penicillins and most cephalosporins. Recent studies have established ceftipime as an effective treatment option for AmpC beta-lactamase producing organisms; however, the efficacy of beta-lactam/beta-lactamase inhibitors (BLBLI) is unclear. A BLBLI is potentially appealing for intra-
abdominal infections as a single drug regimen with coverage of Enterococcus spp. and anaerobic organisms. The objective of this study is to determine if there is a difference in outcomes for patients with intra-abdominal infections caused by AmpC beta-lactamase producing organisms treated with cefepime with or without metronidazole versus piperacillin/tazobactam.

METHODS: This multicenter, retrospective cohort study includes adults greater than 17 years of age with at least one intra-abdominal culture positive for an AmpC beta-lactamase producing organism (Enterobacter spp, Citrobacter spp, Morganella spp, and Serratia marcescens) that received intravenous cefepime with or without metronidazole or piperacillin/tazobactam as definitive therapy. Patients must have undergone at least one source control procedure during the hospital admission. The primary outcome is the composite of surgical-site infections, recurrent intra-abdominal infections, or death. Secondary outcomes include differences in the individual components of the composite outcome, length of stay from index source control procedure, microbiologic failure, length of antibiotic treatment, time to clinical resolution, and incidence of Clostridium difficile infection. Based on a 20% rate of composite complications, a sample size of 276 patients is needed to achieve 80% power and to detect a 15% difference in complication rate between groups. Pearson’s Chi-square test will be used to analyze the primary composite outcome. For secondary outcomes for dichotomous variables, Pearson’s Chi-square test or a Fisher’s exact test will be used. For continuous variables, a Shapiro-Wilk test will determine if the data is parametric. The Student’s t-test will be used for parametric data and the Mann-Whitney U-test will be used for non-parametric data. A Kaplan-Meier estimation and Cox regression will be conducted to describe time to clinical resolution.

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.

VB – INFECTIOUS DISEASE/HIV

PL V-6
NARROW SPECTRUM EMPIRIC ANTIMICROBIAL THERAPY FOR VENTILATOR-ASSOCIATED PNEUMONIA IN CRITICALLY ILL TRAUMA PATIENTS. Holly Krohn, Jennifer Roth, Peter Colley, Geoffrey Funk, Michael Foreman, Baylor University Medical Center, Dallas, TX.

PURPOSE: To assess the efficacy of utilizing a protocol that promotes narrow spectrum empiric antimicrobials for early ventilator-associated pneumonia in critically ill trauma patients.

METHODS: A single-center, retrospective, quality assurance analysis will compare pre- and post-protocol respiratory culture results of adult trauma patients with ventilator-associated pneumonia. Patients will be classified as early [hospital days 0 to 5] or late [hospital days 6 or more] onset of pneumonia. The primary outcome will be the appropriateness of initial antimicrobial therapy based on identified pathogens and susceptibilities on respiratory cultures. Secondary outcomes include length of stay in the intensive care unit, 30 day all-cause mortality, antibiotic days of therapy, antibiotic-free days, percentage of antimicrobials utilized with activity against pseudomonas and MRSA, and rates of clostridium difficile infection. All data will be analyzed for normality of distribution. Summary statistics will be reported using measures of central tendency and statistical significance will be determined using the appropriate parametric tests or their non-parametric analogs.

RESULTS/CONCLUSION: Final results and conclusions will be presented.

PL V-7
ASSESSMENT OF ANTIBIOTIC APPROPRIATENESS FOR URINARY TRACT INFECTIONS IN THE EMERGENCY DEPARTMENT. Kathleen Ubina, Matthew Crotty, Robin Covey, Methodist Dallas Medical Center, Dallas, Texas.

PURPOSE: Urinary tract infections (UTIs) account for approximately 1 million emergency departments (ED) yearly. Despite accounting for a large portion of ED visits, managing these infections remains a challenge due to lack of longitudinal follow-up, incomplete culture or susceptibility results, and increasing rates of multi-drug resistant urinary pathogens. Furthermore, inpatient antibiograms, may not accurately guide empiric outpatient management as these have shown to overestimate resistance rates for community-acquired uropathogens. The purpose of the study was to characterize the susceptibility patterns of urinary isolates obtained in the ED. Prescribing patterns for the empiric management of UTIs were also assessed to identify potential improvements in ED antibiotic utilization and patient readmission rates.

METHODS: In this retrospective observational study, the susceptibility of prescribed outpatient antibiotics were analyzed in patients with finalized urine cultures. The rate of all-cause 30-day ED and hospital readmissions were also compared for isolates not-susceptible versus susceptible to the empiric oral antibiotic prescribed at discharge.

RESULTS: A total of 857 urinary isolates obtained in the ED between January 2014 and December 2015 were analyzed. The most common uropathogen observed was Escherichia coli, which accounted for 52% of isolates. Based on obtained susceptibility patterns, nitrofurantoin (96%) and oral cephalosporins (86%) were more likely to provide coverage for UTI infections caused by Escherichia coli compared to ciprofloxacin (63%) or trimethoprim-sulfamethoxazole (66%). Of the total urinary cultures obtained, there were a total of 152 occurrences when an empiric oral regimen was prescribed at discharge. The urinary isolate(s) were not susceptible to the selected treatment regimen in 27% of cases. Subsequent all-cause 30-day ED or hospital readmission did not differ between the non-susceptible versus susceptible treatment groups (14.8% versus 17.3%; p = NS).

CONCLUSION: Based on the data, there did not appear to be a significant difference between the all-cause readmission rates for individuals who received an appropriate versus inappropriate outpatient empiric treatment regimen for their UTI. Further investigation into the relationship between in vitro susceptibility testing and clinical outcomes of UTIs is warranted.
EVALUATION OF PIPERACILLIN-TAZOBACTAM OR CARBAPENEM USE FOR AMPICILLIN-SENSITIVE ENTEROCOCCAL BACTEREMIA. Erik Skoglund, Kady Phe, Hannah R. Russo. CHI St. Luke’s Health - Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: Enterococcus spp. are a common cause of nosocomial bloodstream infections. The determination of definitive antibiotic therapy is often dependent on ampicillin susceptibility testing, which clinicians routinely extrapolate to select beta-lactams. However, in vitro data suggest ampicillin susceptibility does not accurately predict susceptibility to piperacillin-tazobactam or imipenem among E. faecalis isolates resistant to penicillin. We sought to evaluate the clinical outcomes of patients with ampicillin-susceptible Enterococcus spp. bacteremia who were treated with ampicillin vs. piperacillin-tazobactam or a carbapenem.

METHODS: This was a single center, retrospective, cohort study. Patients were screened for clinically relevant ampicillin-sensitive Enterococcus spp. bloodstream isolates from 2013 to 2017. Patients were stratified by choice of initial directed therapy via ampicillin-based vs. non-ampicillin-based regimens. The primary outcome of the study was treatment failure, defined as switching of antibiotics due to clinical or microbiological failure, persistent signs and/or symptoms of infection, or recurrence of Enterococcus spp. infection.

RESULTS: Seventy-eight patients were evaluated (N=59 received ampicillin-based definitive therapy, while N=19 received non-ampicillin-based definitive therapy). The majority of patients in the non-ampicillin-based cohort received piperacillin-tazobactam (n=16, 84%). The most common source of bacteremia overall was intra-abdominal (n=22, 28%), followed by intra-venous catheter (n=21, 27%). Patients in the non-ampicillin-based cohort were more likely to have had an intra-abdominal source of infection (53% vs. 20%, p<0.01) as well as a polymicrobial bacteremia (26% vs. 10%, p=0.08). Additionally, infective endocarditis or endovascular involvement was a more common complication among patients who received ampicillin-based initial directed therapy (27% vs. 0%, p=0.01). There was no difference between groups in the percent of patients who received definitive source control (47% in each group). Patients who received ampicillin-based initial directed therapy were less likely to have recurrent Enterococcus spp. isolated within 30 days of starting initial directed therapy (OR 0.32, 95%CI 0.08-1.19). There were no documented therapy changes due to persistent signs and/or symptoms of infection.

CONCLUSION: These findings suggest careful clinical consideration when evaluating definitive therapy options for Enterococcus spp. infections. Further research is needed to elucidate the appropriateness of extrapolating beta-lactam susceptibilities in ampicillin-sensitive Enterococcus spp. infections.

VIA – ONCOLOGY (PGY1)

COMPARISON OF POSACONAZOLE VS. VORICONAZOLE IN THE INDUCTION OR SALVAGE OF ACUTE MYELOID LEUKEMIA: IMPACT ON COST, SAFETY, AND EFFICACY. Olivia Antosz, Christopher Selby, Caitlin Shamroe, Breanne Peyton-Thomas. University Health- Shreveport, LA.

PURPOSE: University Health Shreveport has switched from using posaconazole to voriconazole for the prevention of invasive fungal infections in patients with acute myeloid leukemia (AML) undergoing intensive chemotherapy in February 2016. There are no current studies comparing the cost effectiveness of posaconazole to voriconazole in reducing invasive fungal infection in this patient population. Therefore, the purpose of this study is to compare the cost of posaconazole to voriconazole in patients with AML undergoing intensive chemotherapy, in addition to the incidence of adverse effects and reduction of invasive fungal infections.

METHODS: Single-center, quality improvement study utilizing retrospective chart review of 40 patients with AML receiving voriconazole (n=20) or posaconazole (n=20) for prevention of invasive fungal infections.

RESULTS: Forty patients with AML undergoing intensive chemotherapy received voriconazole (n=20) or posaconazole (n=20). Baseline characteristics were similar between groups. The average cost per patient for posaconazole was $3,940.56 (acquisition cost of posaconazole 100 mg tablet $55.54; dose used 300 mg) compared to $1,179.53 for voriconazole (acquisition cost of 200 mg tablet $24.99; dose used 200 mg). In reference to adverse effect profiles, 55% of patients in the posaconazole group switched to an alternative antifungal agent. Of those, ~73% switched due to increased liver function tests. In the voriconazole group, 35% of patients switched to an alternative agent, and of those, 86% were due to increased liver function tests. In both groups, no patients had experienced an invasive fungal infection.

CONCLUSION: The use of voriconazole in patients with AML undergoing intensive induction chemotherapy resulted in lower system costs compared to the use of posaconazole. Additionally, adverse effect profiles were similar in both groups and no patients experienced an invasive fungal infection.
PL VI-2
CORRELATION OF ALBUMIN-ADJUSTED CALCIUM AND IONIZED CALCIUM MEASUREMENTS FOR MONITORING HYPERCALCEMIA IN MULTIPLE MYELOMA PATIENTS. Michael J. Buege, Bryan Do, Hans C. Lee, Sandra B. Horowitz, Lei Feng, Yun Qing, Brandon R. Shank, The University of Texas MD Anderson Cancer Center, Houston, TX.

PURPOSE: Disease-defining myeloma paraproteins have been shown to have calcium-binding properties, potentially confounding albumin-adjusted serum calcium values. This study assessed the utility of albumin-adjusted calcium in screening patients with multiple myeloma for hypercalcemia based on correlation between albumin-adjusted calcium and ionized calcium.

METHODS: A single-center retrospective chart review of patients with multiple myeloma being treated at a large comprehensive cancer center was performed. A control group of patients with breast or non-small cell lung cancer was included to characterize the impact of paraproteins on free calcium. Correlations between ionized calcium and total serum calcium measurements adjusted for albumin using the modified Orrell equation were calculated using Spearman’s methodology. Sensitivity and specificity of albumin-adjusted calcium were also calculated, using ionized calcium as an absolute indicator of calcium status. Multiple linear regression modeling was performed to assess the influence of several biologically plausible variables on albumin-adjusted calcium measurements.

RESULTS: The study included 100 patients with multiple myeloma and 100 patients in the control group (56% breast cancer, 44% non-small cell lung cancer) who presented between January 1, 2005 and December 31, 2015. Statistically significant correlations were found between ionized calcium and albumin-adjusted calcium measurements in the multiple myeloma (0.76; p < 0.001) and control (0.85; p < 0.001) groups. The sensitivity and specificity of albumin-adjusted calcium in detecting hypercalcemia (as classified by ionized calcium values ≥ 1.33mmol/L) were 36% and 91% in the multiple myeloma group and 72% and 88% in the control group, respectively. Multiple linear regression modeling did not show a strong association between the included variables and albumin-adjusted calcium in either group.

CONCLUSION: The correlation between ionized calcium and albumin-adjusted calcium was enhanced in the control group compared to the multiple myeloma group. Given the improved correlation and low calculated capacity for albumin-adjusted calcium to detect ionized calcium-conformed hypercalcemia, ionized calcium appears to be the best method of detecting of detecting hypercalcemia in patients with multiple myeloma.

PL VI-3
THE INCIDENCE OF INVASIVE FUNGAL INFECTIONS WHILE ON VORICONAZOLE, LIPOSOMAL AMPHOTERICIN B, OR MICAFUNGIN FOR PRIMARY FUNGAL PROPHYLAXIS IN PEDIATRIC HEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS. Annie Q. Bui, Veronica Nguyen, Christina Hsu, Ben Hyde, Tiffany Simms-Waldrip, Children’s Health Children’s Medical Center Dallas, Dallas, TX.

PURPOSE: The primary objective of this study is to report the incidence of invasive fungal infections (IFIs) in pediatric hematopoietic stem cell transplant (HSCT) patients receiving voriconazole, liposomal amphotericin B or micafungin for primary fungal prophylaxis. The secondary outcomes will be to identify whether IFIs were due to mold (Aspergillus spp.) or yeast (Candida spp., Cryptococcus spp.), and medication adverse effects.

METHODS: Using data retrospectively collected from the institution’s electronic records, we analyzed the incidence of IFIs in pediatric HSCT patients at Children’s Health Children’s Medical Center of Dallas between November 2012 and November 2016.

PRELIMINARY RESULTS: A total of 112 patients were screened. Of the 78 patients who met inclusion criteria, 74% patients received voriconazole, 32% patients received liposomal amphotericin B, and 19% patients received micafungin. The incidence of overall IFIs (proven, probable or possible according to revised European Organization for Research and Treatment of Cancer [EORTC] criteria) was 2.24 per 1,000 prophylaxis days. There were 2 proven mold infections identified in 2 patients. Patients who received liposomal amphotericin B (2.67 per 1,000 prophylaxis-days) and micafungin (2.22 per 1,000 prophylaxis-days) had higher rates of IFIs than patients who received voriconazole (1.29 per 1,000 prophylaxis-days) as primary fungal prophylaxis after HSCT (p = 0.09 and p = 0.31, respectively). In the voriconazole group, liver abnormalities were observed in 22/58 patients (38%) while renal abnormalities were seen in 21/25 (84%) patients who received liposomal amphotericin B.

CONCLUSION: Despite the broad use of antifungal prophylaxis, IFIs remain a leading cause of morbidity, mortality and economic burden following HSCT in children. Based on the interim data, patients receiving liposomal amphotericin B or micafungin had higher rates of IFIs than those receiving voriconazole for primary fungal prophylaxis.

PL VI-4
EFFICACY AND COST ANALYSIS OF A TBO-FILGRASTIM PROTOCOL FOR STEM CELL ENGRAFTMENT IN AUTOLOGOUS STEM CELL TRANSPLANT. Morgan Corbin, Afaf Abdulbaki, Breanne Peyton-Thomas, Christopher Selby, University Health-Shreveport, Shreveport, LA.

PURPOSE: To compare the time to engraftment with changes in granulocyte colony stimulating factor (G-CSF) medication and start date of G-CSF based on changes in standard operating procedures (SOP) at University Health-
alternative doses were compared to calculate the average doses (Method 2), and IBW for all doses (Method 3). Baseline demographics were similar between groups except for more patients with multiple myeloma were treated with melphalan in the filgrastim group and more patients with lymphoma treated with BEAM in the tbo-filgrastim group. There was no difference in time to engraftment based on changes in G-CSF or start date of G-CSF. Those in the tbo-filgrastim group on average required 16 (12-24) days to engraft (ANC > 1500 x 2 days), while those in the filgrastim group required only 14 (12-19) days. Patients in the tbo-filgrastim group did experience more episodes of febrile neutropenia, and thus required a longer duration of antibiotics. Ninety-two percent of those in the tbo-filgrastim group experienced febrile neutropenia during hospitalization, while only 54% of those in the filgrastim group experienced febrile neutropenia during their hospitalization. On average, filgrastim cost $5041.36 per patient, while tbo-filgrastim cost $3750.01.

CONCLUSION: When comparing G-CSF cost per patient alone, tbo-filgrastim did implement an average cost savings of $1291.35 per patient. Patients in the tbo-filgrastim group did experience higher rates of febrile neutropenia and thus required antibiotic use for a longer duration. This could be contributed to changes in the SOP.

PL VI-5
OPTIMIZATION OF INTRAVENOUS IMMUNOGLOBULIN UTILIZATION AT A COMPREHENSIVE CANCER CENTER. Bradley S. Figgins, Samuel L. Aitken, Laura K. Whited, University of Texas MD Anderson Cancer Center, Houston, TX.

PURPOSE: Intravenous immunoglobulin (IVIG) is a high-cost drug utilized in a diverse range of clinical settings. At the University of Texas MD Anderson Cancer Center, current practice is to dose IVIG using actual body weight (ABW). Recent evidence suggests that alternative dosing weights may reduce waste without compromising clinical outcomes. Considering the pharmacokinetics of IVIG and controversial benefits of use in the oncologic setting, use of ABW-based doses may waste resources, prolong infusion times, and increase risk of adverse effects. The objective of this study was to assess the waste reduction potential generated through use of an alternative IVIG dosing scheme.

METHODS: We performed a retrospective analysis of all IVIG (Privigen®) doses administered from January 2011 through January 2016 in adults (≥18 years) receiving treatment at MD Anderson. Weight and height at the time of administration were used to calculate prescribed dose (g/kg), ideal (IBW) and adjusted body weight (AdjBW). Three alternative dosing methods were analyzed: use of AdjBW if ABW >120% IBW (Method 1), AdjBW for all doses (Method 2), and IBW for all doses (Method 3). For each method, the difference in the ABW-based and alternative doses were compared to calculate the average annual reduction in IVIG usage. Cost differences were calculated using time-adjusted average wholesale price. Infusion times for outpatient doses were calculated using a standard infusion rate of 10 g/hr; time differences between ABW-based and new doses were then summed to calculate annual infusion time savings.

RESULTS: A total of 9,918 doses were administered to 2,564 patients (59.7% male, mean ABW 79.3 kg) over five years, representing average cumulative usage of 75,994 g/year. Results indicate that if dosing methods 1, 2, and 3 were used, annual use of IVIG would have decreased by 21.9% (16,658 g averted/year), 24.2% (18,371 g/year), and 35.9% (27,252 g/year), respectively. This translates into average annual cost differences of $2.37 million, $2.62 million, and $3.89 million and average annual outpatient infusion time savings of 841 hours, 920 hours, and 1,366 hours.

CONCLUSION: Use of alternative weights for IVIG dosing may represent a significant source of direct and indirect cost-savings to institutions, patients, and the health care system. Reduced IVIG doses shorten infusion times and may potentially lead to decreased risk of toxicity, allowing for enhanced patient satisfaction and higher patient volumes in the outpatient setting.

VIB – AMBULATORY CARE (PGY1)

PL VI-6
PATIENTS’ PERSPECTIVE ON PHARMACISTS’ ROLE AS A SEXUALLY TRANSMITTED INFECTION PROVIDER FOR GONORRHEA, CHLAMYDIA, AND TRICHOMONIASIS IN AN AMBULATORY CARE SETTING. Esther C. Okoro, LaKeisha Williams, Daniel Sarpong, Kristi Isaac Rapp, Xavier University College of Pharmacy, New Orleans, LA.

PURPOSE: To assess and understand patients’ views on pharmacists serving as sexually transmitted infections (STI) providers for gonorrhea, chlamydia, and trichomoniasis. Currently, limited data shows the benefits of pharmacists providing STIs services (i.e. examinations, medication therapy review, sexual health education, etc.). Gaining patients’ perceptions on pharmacists as STI providers may be the key in permitting expansion of clinical services in sexual health.

METHODS: This is a prospective mixed method study conducted from targeted medically underserved FQHCs. Inclusion criteria: sexually active adults, ages 18 to 50 years, obtain informed consent. Phase I (Quantitative Study) consists of the administration of a previously adapted survey that aims to identify patients’ knowledge on pharmacists as healthcare providers, views on pharmacists as sexual health STI providers, patients’ sexual history (i.e. diagnosis of gonorrhea, chlamydia, and trichomoniasis), and patients’ knowledge on STIs. Phase II (Qualitative Study) will involve focus group sessions to ascertain context to the pattern of perception of the study sample relative to pharmacists serving as providers in sexual health management and education of STIs. The focus group data will be audio-recorded and transcribed. All data collected will be confidential and will not provide patient identifiers. Descriptive statistics, t tests, chi square tests, analysis of variance and regression analysis will be performed. All

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PL VI-7
BRIDGING THE VACCINATION KNOWLEDGE GAP WITH AN EDUCATIONAL GAME TO INCREASE ADMINISTRATION RATES IN ADULTS, 50 YEARS AND OLDER. Kristi D. Rice, Nancy T. Williams, Henry W. Kinnard, Southwestern Oklahoma State University/Walgreen Co., Oklahoma City, OK.

PURPOSE: In the last few years, the United States has faced outbreaks of whooping cough in our infant population, increased occurrences of hospitalizations from shingles, and rising numbers of deaths from Streptococcus pneumoniae. Many people realize that vaccines are important for children; however, barriers inhibit adults from receiving their vaccinations. Objectives: 1) identify baseline knowledge and willingness to be vaccinated with tetanus, diphtheria, acellular pertussis (Tdap), pneumococcal 13-valent conjugate (PCV13), pneumococcal 23-valent polysaccharide (PPSV23), and herpes zoster (HZV) vaccines; 2) analyze feedback on an educational game as a teaching tool; and 3) compare vaccination rate data to prior year, in adults 50+ years.

METHODS: Approximately 50-75 adults 50+ years will be recruited while visiting the community pharmacy. A secondary community pharmacy site nearby will be selected, if recruitment is low at the primary site. This study will follow the Centers for Disease Control and Prevention and Advisory Committee on Immunization Practices guidelines. Patients who meet the study age requirement, with no exclusion criteria, will be asked to sign an informed consent statement and participate in pre-educational session surveys assessing demographics, baseline knowledge, and willingness to receive vaccines. The educational session, lasting 15-30 minutes, involves a laptop-based, Jeopardy-style learning game. The session covering Tdap, PCV13, PPSV23, and HZV will teach patients about these vaccine-preventable disease states, importance of adult vaccines, and herd immunity. Next, patients will be given a post-educational survey and administered any vaccines if interested. Participants with unknown vaccine history will be asked for permission to contact their physician and thus need to return at a later date to receive vaccine. The University IRB Committee and Walgreens Corporate have approved this study, which will last for a four-month period (12/2016-3/2017), with loyalty rewards points offered. The data will be analyzed with descriptive and quantitative statistics.

RESULTS: As of late February 2017, 44 patients had participated. The population was mostly Caucasian (68%), female (57%), average age of 59, and average education level of some college (43%). Only 18% had a healthcare degree, and 97% had insurance. Over half (66%) responded “yes” to their healthcare provider discussing vaccines with them, and 68% answered “yes” they are current on their adult vaccines; however, several answered “no” or “I do not know” when asked if they received their Tdap (27%), PCV13 (80%), PPSV23 (80%), or HZV (89%) vaccines. While 23% were willing to receive a vaccine following the session, only two patients (5%) actually received vaccines. Average vaccine knowledge survey scores went up 17% following the educational session. Most patients either strongly agreed or agreed (98%) that the session helped them understand vaccines, and 63% answered their adult vaccines are now a high priority. Unfortunately, store data for the targeted vaccines indicated a 41% decrease in administration rates from last year. Data collection will continue through March 2017.

CONCLUSIONS: Pending conclusion of data collection.

PL VI-8
EVALUATION OF PHARMACIST INVOLVEMENT IN MEDICARE WELLNESS VISITS. Tram Tran, Heather Miller, Delaney Ivy, Paul Godley, Baylor Scott & White Health, Temple, TX.

Background: To increase the focus on wellness and preventive care, the Patient Protection and Affordable Care Act of 2010 initiated and provided coverage for annual Medicare Wellness Visits (MWVs) for Medicare beneficiaries. Pharmacists are listed as eligible health professionals to deliver MWVs in the Affordable Care Act; however, they are rarely utilized. Pharmacists have the unique ability to enhance the quality of MWVs by performing comprehensive medication reconciliations, identifying drug therapy problems, and providing patient education on drug therapy. To date, in Texas, there are no published studies comparing MWVs involving pharmacists to those conducted by other health care providers.

Purpose: The purpose of this study is to evaluating the difference in number of drug therapy interventions between patients seen by pharmacists and patients seen by non-pharmacist providers during MWVs.

Method: Pharmacists perform the medication reconciliation during the MWVs. Drug therapy problems will be collected and categorized as indication, effectiveness, safety, or compliance. The number of drug therapy problems identified by pharmacists will then be compared to those identified by non-pharmacist providers conducting MWVs.

Result/Conclusion: Data analysis is currently in progress and will be included in presentation slides

PL VI-9
Open

 statistical tests will be performed at p<0.05 significance level. Content analysis of the qualitative data will be performed to ascertain emerging themes relative to the role of pharmacists as STI providers.

RESULTS: Research in progress.

CONCLUSION: Research in progress.
VIIA – TRANSPLANT

PL VII-1
ASSESSMENT OF INDUCTION IMMUNOSUPPRESSION THERAPY AT A LIVER TRANSPLANT CENTER. Amal AlSomali, Mozhgon Moaddab, Kimberly Putney, Raymond Yau, CHI St Luke’s Health Baylor St Luke’s Medical Center, Houston, TX.

PURPOSE: The purpose of this project is to assess the safety and efficacy of hydrocortisone compared to methylprednisolone and initial tacrolimus levels for induction therapy in liver transplant recipients.

METHODS: This is a retrospective observational chart review of liver transplant recipients at the study institution from August 1, 2013 to August 31, 2016. A list of all patients receiving induction therapy with hydrocortisone or methylprednisolone who fit the inclusion and exclusion criteria was obtained from the electronic health record database. Data collected included demographics, indication for transplant, pertinent labs, induction agents, adverse effects related to induction therapy, tacrolimus dose, time to therapeutic tacrolimus levels, and evidence of biopsy-proven rejection at 30 days.

PRELIMINARY RESULTS: An analysis of 199 newly liver transplanted patients was performed. The average age of patients was 55 years with 65.3% being males. Of these patients, 166 (83.41%) received hydrocortisone compared to 35 (17.59%) that received methylprednisolone as an induction therapy on the day of transplant. A total of 62 patients, 31 in each group, were matched based on the indication of transplant, age, gender, and weight. Among patients receiving hydrocortisone, the average time to therapeutic tacrolimus trough levels was 5.2 ± 1.82 days while the average time to tacrolimus therapeutic trough levels was 5.4 ± 1.67 days in the methylprednisolone patients (P= 0.6529). There was no statistical difference in the rejection rates among the two groups (1% of hydrocortisone vs. 0% of methylprednisolone; P= 1.00).

PRELIMINARY CONCLUSION: In this study, there was no difference between hydrocortisone and methylprednisolone as induction therapy in preventing early organ rejection.

PL VII-2
ASSESSMENT OF THE RATE OF REJECTION WITH BRAND PROGRAF VERSUS GENERIC TACROLIMUS. Olawaseyi Fasiku, Mozhgon Moaddab, Raymond Yau, Melissa Manson, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: To assess the difference in the rate of rejection immediately post-transplant in patients initiated on brand Prograf® versus generic tacrolimus.

METHODS: Using data retrospectively collected from electronic medical records of organ transplant recipients initiated on brand Prograf® or generic tacrolimus immediately post-transplant at CHI St. Luke’s Health Baylor St. Luke’s Medical Center between January 2012 and October 2016, we compared biopsy proven rejections during the first 3 months post-transplant in both groups. A Fisher’s exact test was performed to assess the difference in rejection rates between the patients initiated on brand Prograf® versus generic tacrolimus. We also compared serum tacrolimus trough levels at the time of rejection, and incidence of tremors between generic and brand-name initiators.

RESULTS: An interim analysis of 150 patients after kidney (n=30), liver (n=40), heart (n=40), or lung (n=40) transplants was performed. Patient characteristics include: 61% male, mean age of 56 years [SD] ±12.9, and 54% Caucasian. Seventy nine (53%) transplant recipients were initiated on generic tacrolimus. Thirty one percent (47/150) of patients analyzed experienced either an acute cellular or antibody mediated rejection during the first 3 months post-transplant. Four percent (2/47) of these rejections were antibody mediated. Sixty eight percent (32/47) of the biopsy proven rejections occurred in heart transplant recipients. Of the 47 rejecting patients, 45% (21/47) received the generic tacrolimus while 55% were initiated on brand Prograf®, corresponding to \( p = 0.2187 \). No significant difference in biopsy-proven rejections was noted between both groups. Similar results were also observed for the secondary endpoints. Mean tacrolimus trough concentration at rejection was 7.8 [SD] ±3.02 ng/mL for generic tacrolimus and 8.2 [SD] ±6.3 ng/mL for brand Prograf® initiators at the time of rejection. Tremor was observed in 17% (13/79) of patients initiated on generic tacrolimus vs. 23% (16/71) patients on brand Prograf®.

CONCLUSION: Based on the interim data, there was no statistically significant difference in biopsy-proven rejections between both groups. Patients initiated on generic tacrolimus experienced similar clinical outcomes compared to those on brand Prograf®. The use of generic tacrolimus is a reasonable option in transplant patients.

PL VII-3
EVALUATION OF THE CURRENT FAMILY PLANNING INTERVENTIONS IN FEMALE SOLID ORGAN TRANSPLANT PATIENTS. Andrea Fetea, Elizabeth K. Nugent, Judith A. Smith, UTHealth McGovern Medical School, Memorial Hermann-Texas Medical Center, Houston, TX.

PURPOSE: The objective of this retrospective chart review was to determine the use of contraception in female solid organ transplant patients at Memorial Hermann Hospital-Texas Medical Center (MHH-TMC) to evaluate if the women are educated on potential risks of unplanned pregnancy within the first 12-24 months post-transplant. Healthcare professionals were asked to complete a survey to identify potential knowledge gaps regarding the topic.

METHODS: This was a single center, retrospective chart review study of patients receiving a solid organ transplant at Memorial Hermann Transplant Clinic. Eligibility criteria included female patients of reproductive potential >11 years old who received a solid organ transplant (excluding cardiac transplants) at Memorial Hermann Transplant Clinic. An anonymous electronic and hard copy survey is being conducted in healthcare providers involved in the care of transplant patients to identify potential knowledge gaps regarding pregnancy post-transplant. Includes questions to evaluate baseline knowledge regarding return of fertility in female patients post-transplant, how often they counseled patients on the possibility of pregnancy post-transplant, if they counseling patients on birth control before transplant or after transplant, and finally if any
patient has experienced an unplanned pregnancy post-transplant.

RESULTS: A total of 208 patients were screened for inclusion. 147 patients were excluded and 61 patients were included in the study. Of these patients, 1.6% received a prescription for oral contraception or instruction to utilize barrier contraception. 3.3% of patients received an intrauterine device and 11.5% of patients received surgical sterilization. Overall, 84% of patients did not receive any contraception or there was no documented proof of contraception in the electronic medical record. A total of 6 surveys have been returned to date with anticipated completion by March 10, 2017.

CONCLUSION: The data suggests that intrauterine device or surgical sterilization is the most common contraception interventions being utilized in the female transplant patients at Memorial Hermann Transplant Clinic. However it appears a majority of female patients of child-bearing potential are not receiving contraception. The survey will provide data to help delineate if this due to lack of knowledge from not being educated by the healthcare providers of risk of pregnancy or if it is an issue with compliance. This may lead to the development of innovative education interventions to optimize patient education and compliance with contraceptive use.

PL VII-4
IMPACT OF RISK-STRATIFIED MYCOPHENOLATE DOSING IN HEART TRANSPLANTATION. Joanna Wu, Teena Sam, Shelley Hall, Baylor University Medical Center, Dallas, TX.

PURPOSE: The optimal anti-proliferative approach to maximize efficacy and minimize adverse effects after orthotopic heart transplantation (OHT) remains unknown. We sought to evaluate the impact of risk-stratified mycophenolate dosing on clinical outcomes and safety in heart transplant recipients.

METHODS: This is a retrospective chart review of patients who underwent OHT at Baylor University Medical Center from January 1, 2012 to January 1, 2016. Patients were risk-stratified into 3 study groups: (1) low risk patients who received mycophenolate dosed 0.5gm twice daily, (2) high risk patients who received 1 gram twice daily, and (3) CMV mismatch patients who received azathioprine 1mg/kg. The primary end point was a composite of biopsy-proven acute rejection (BPAR), graft loss/re-transplantation and mortality at 1-year post-transplant. Secondary endpoints included incidence of neutropenia, thrombocytopenia or infection at 1-year post-transplant, or incidence of mortality, graft loss/re-transplantation or rejection at any time point.

RESULTS/CONCLUSIONS: An interim analysis of approximately 250 patients will be performed. Preliminary results will be described based on reported findings.

PL VII-5
SAFETY OF ALEMTUZUMAB IN ELDERLY KIDNEY TRANSPLANT RECIPIENTS. Jeffrey Quach, Stephanie Anders, Jordan Mangum, Ochsner Medical Center, New Orleans, Louisiana.

PURPOSE: Alemtuzumab has been widely studied as an agent for induction in many areas of solid organ transplant due to its prolonged and profound immunosuppressive effects. This property of alemtuzumab allows for a reduction of immunosuppressive medications that have improved outcomes but are ultimately associated with significant side effects with long-term use, such as calcineurin inhibitors and corticosteroids. Also, alemtuzumab has not been shown to have any worse outcomes compared to other regimens for induction in the general population; however, there is a paucity of data addressing the safety of alemtuzumab in the elderly. In an effort to minimize CNI and steroid usage and reduce costs, Ochsner Medical Center primarily uses alemtuzumab for induction. The purpose of this study is to assess safety in the elderly population status-post alemtuzumab induction to better define optimal induction regimens within this cohort.

METHODS: This is a single-center, retrospective, cohort study comparing elderly and non-elderly adult kidney transplant recipients at Ochsner Medical Center from January 2013 to November 2015, with a 1 year follow-up.

RESULTS: In Progress

CONCLUSIONS: In Progress

PL VII-6
EVALUATION OF THE USE OF GASTROINTESTINAL PROPHYLAXIS IN A LIVER TRANSPLANT POPULATION. Khuloud AlJoudi, Mozhgon Moaddab, Kimberly Putney, Raymond Yau, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: To assess the efficacy and safety outcomes of histamine-2 receptor antagonists (H2RAs) as an alternative for proton pump inhibitors (PPIs) in newly transplanted liver patients and to provide a clearer understanding of infection rates between H2RAs and PPIs at a large academic transplant center.

METHODS: This is a retrospective, cohort, observational, single center study evaluating newly transplanted liver patients from August, 2013 to August, 2016 who received PPIs or H2RAs over a one year period at the study institution. The primary endpoint was to compare the occurrence of gastrointestinal (GI) bleeds in newly transplanted liver patients receiving PPIs compared to H2RAs. The secondary endpoints were to evaluate the incidence of pneumonia, Clostridium difficile infection (CDI) and associated mortality. Differences in categorical variables were assessed by Chi-square, and baseline comparisons between two groups were made using mean scores.

PRELIMINARY RESULTS: This study consisted of 121 patients with a mean age of 57.4 years, of which 77 (63.6%) were men and 68 (56.19%) were Caucasians. Patients were assigned into two groups, H2RAs group (n=60) and PPI group (n=61). The most common indication for liver transplantation was Hepatitis C (n=58, 47.93%). H2RAs were well tolerated with no GI bleeding events comparing to the PPIs (0% vs. 4.9%; p-value: 0.082). There
was no significant difference in pneumonia (3.33% vs. 11.47%; p-value: 0.087) and CDI (11.6% vs. 4.9%; p-value: 0.177) rates among the two groups. However, the mortality rate in H2RAs group was significantly lower compared to PPI group (5% vs. 19.67%; p-value: 0.014).

CONCLUSION: Our findings suggest a lower incidence of GI bleeds, pneumonia, and lower associated mortality after liver transplantation with the use of H2RAs. Additionally, there are similar rates of CDI when comparing H2RAs versus PPIs for GI ulcer prophylaxis.

PL VII-7
EVALUATION OF LOW-DOSE VALGANCICLOVIR FOR CMV PROPHYLAXIS IN RENAL TRANSPLANT PATIENTS. Megan Moore, Jennifer Cortes, Sara Schepcoff, Memorial Hermann Texas Medical Center, Houston, TX.

PURPOSE: After renal transplantation, Cytomegalovirus (CMV) is one of the most common infectious complications that patients face. In October 2015, the abdominal transplant group at Memorial Hermann implemented a change in the CMV prophylaxis protocol, using valganciclovir 450 mg daily instead of 900 mg daily in renal transplant patients at moderate and high risk for CMV infection. The objective of this study is to examine the frequency of CMV infections in patients receiving low-dose valganciclovir for CMV prophylaxis after renal transplantation compared to those who received the higher dose of valganciclovir.

METHODS: This is a single center, retrospective, cohort study. Kidney transplant recipients were included if they were moderate or high risk for CMV infection and transplanted between October 2014 and April 2016. Patients were excluded if they were under 18 years old, HIV-positive, low risk for CMV infection, died within 30 days of transplant, or received a multi-organ transplant.

RESULTS: During the study period, 155 patients were screened and 99 met inclusion and exclusion criteria. Baseline demographics showed a median age of 52 years old (IQR 42-59) and 58% of patients were male. Of the 99 included patients, 49 patients received high-dose valganciclovir and 50 patients received low-dose valganciclovir. A total of 14 (14%) patients had positive CMV studies. The overall occurrence of positive CMV studies in this time period was 9 patients (18%) in the high-dose group and 5 patients (10%) in the low-dose group (p=0.23).

CONCLUSION: Based on preliminary analysis, low-dose valganciclovir is non-inferior to high-dose valganciclovir for CMV prophylaxis.

VIIB – EMERGENCY MEDICINE
PL VII-8
SAFETY AND EFFICACY OF VARYING DOSES OF INSULIN FOR THE TREATMENT OF HYPERKALEMIA IN PATIENTS WITH END STAGE RENAL DISEASE. Trishna Kuber, Terence Chau, Sapana Desai, Memorial Hermann Memorial City Medical Center, Houston, TX.

PURPOSE: Patients with end stage renal disease are at an increased risk of hyperkalemia. A common treatment to shift potassium intracellularly is through the administration of insulin. The purpose of this study was to assess whether 5 units of insulin compared to 10 units of insulin decreased the incidence of hypoglycemia while effectively lowering serum potassium levels in patients with end stage renal disease.

METHODS: This study was a retrospective chart review. Patients were eligible if they had end stage renal disease, had a potassium level greater than 5.0 mEq/L and if they received an order for either 5 units (low dose group) or 10 units (high dose group) of insulin as treatment. Patients were then divided in to two groups based on the dose of insulin they received. The groups were compared to each other to assess differences in rates of hypoglycemia as well as differences in serum potassium levels from baseline.

RESULTS: A total of 180 patients were included in the study, with 118 patients in the low dose group and 62 patients in the high dose group. The mean differences in potassium levels from baseline were 1.62 mEq/L in the low dose group compared to 2.11 mEq/L in the high dose group (p=0.003). Overall, there were 45 incidences of hypoglycemia. Between the low dose group and the high dose group, the rates of hypoglycemia were 19.5% and 35.5% (p=0.02), respectively. However, there were no differences in mortality between the two groups (1 incident in the low dose group versus 3 incidences in the high dose group; p= 0.08).

CONCLUSIONS: Ten units of insulin appears to be more effective at reducing serum potassium levels in patients with end stage renal disease. Although no mortality differences were observed between the groups, the high dose insulin group had increased incidence of hypoglycemia.

PL VII-9
RISK FACTORS ASSOCIATED WITH QT PROLONGATION IN A GERIATRIC PATIENT POPULATION PRESENTING TO THE EMERGENCY DEPARTMENT WITH COMMUNITY ACQUIRED PNEUMONIA. Nicholas W. Yarbrough, Mohamed A. Hersi, Terence Chau, Memorial Hermann Memorial City Medical Center, Houston, TX.

Purpose: It is well known that patients with prolonged QTc are at an increased risk for life-threatening ventricular arrhythmias such as Torsade de points. Elderly patients presenting to the emergency department with pneumonia are a potentially high risk population for acquired QTc prolongation due to advanced age, comorbidities, chronic medications, and the standard therapy commonly utilized to treat community acquired pneumonia. The objective of this
study is to assess which factors (if any) are most associated with moderate to high risk QTc prolongation in elderly patients started on empiric antimicrobial regimens for community acquired pneumonia in the emergency department.

Methods: This study has been approved by the Institutional Review. The electronic medical record system has identified over 3000 patients to be screened for inclusion criteria of 65 years and older, completed order of at least 1 dose of levofloxacin or azithromycin in the emergency department and radiologic evidence or provider documentation for suspected pneumonia. The following data will be collected: patient age, gender, past medical history, home medications, medications administered during hospital stay, electrocardiogram readings, radiology, and laboratory data. All data will be recorded without identifiers and maintained confidentially. Baseline and longest subsequent QTc reading within 14 days will be recorded and evaluated for QTc prolongation defined as a QTc of 470ms (480ms in women) to 499ms or an increase of 30 to 59ms from baseline; or severe prolongation defined as any reading greater than 499ms or increase greater than 59ms from baseline. Factors known to prolong the QTc will then be analyzed amongst patients with and without prolonged to determine which factors associated with a prolonged QTc in this patient population

RESULTS: Pending

CONCLUSION: Pending

PL VII-10
SAFETY OF EPINEPHRINE AUTO-INJECTORS FOR ANAPHYLAXIS IN THE INPATIENT HOSPITAL SETTING. Blake Smith, Craig Cocchio, Amy Martin CHRISTUS Trinity Mother Frances Health System, Tyler, Texas.

PURPOSE: To evaluate if withdrawing epinephrine from a vial and delivering intramuscularly is non-inferior to epinephrine auto-injector use for the treatment of anaphylaxis in an inpatient hospital setting. Each method of injection imposes various risks and benefits, which will be discussed along with a direct cost comparison.

METHODS: Retrospective chart review was performed using the institution’s electronic records, we collected patient demographics, ordered route of epinephrine administration, actual route of administration, suspected anaphylaxis trigger, time from epinephrine order entry to time dose was given, blood pressure, heart rate, temperature, respiration rate, serum glucose, ordered dose, and actual dose administered. Adverse reactions were collected such as dizziness, tremor, cardiovascular events including arrhythmia, cardiac ischemia, stroke, angina, tachycardia defined as >100 beats per minute, and hypertension defined as systolic >180 mmHg or diastolic >120 mmHg. The primary endpoint measure was overall error rate in each of the treatment arms epinephrine auto-injector versus epinephrine vials. Secondary outcomes studied included incorrect route of administration, incorrect dose given, and order entry to administration time.

RESULTS: Data collection is ongoing.

CONCLUSION: To be determined.

PL VII-11
EVALUATION OF INTRAVENOUS FLUID RESUSCITATION AND PAIN MANAGEMENT OF SICKLE CELL PAIN CRISIS IN THE EMERGENCY DEPARTMENT. Anastasiya O Nosova, Lucretia Davis, Christine Huls, Miguel Salazar, CHI St Luke’s Health Baylor St Luke’s Medical Center, Houston, TX.

PURPOSE: To evaluate intravenous (IV) fluid resuscitation and pain management of patients with sickle cell disease who present to the emergency department (ED) with a complaint of vaso-occlusive crisis at a large academic medical center.

METHODS: Retrospective data were collected from electronic medical records of all patients with sickle cell of any type who presented to the ED of a quaternary teaching institution with suspected vaso-occlusive crisis between September 1, 2015 and August 31, 2016. A two sample t-test was performed to analyze the primary endpoint: mean ED length of stay of discharged patients who received analgesic medications and IV fluids within 1 hour of ED arrival and patients who did not receive analgesic medications and IV fluids within 1 hour of ED arrival.

RESULTS: An analysis of 381 emergency department visits, representing 101 individual patients, was performed. On 86 (22.57%) visits, patients received both IV fluids and pain medication within 1 hour of ED arrival (study group) compared to 295 (77.43%) visits which did not receive IV fluids and pain medication within 1 hour of ED arrival (control group). In the study group, 47 (54.65%) were discharged from the ED, compared to 140 (47.46%) visits which resulted in discharge from the ED in the control group. The mean ED length of stay was 3.18 ± 1.01 and 5.02 ± 2.81 hours for patients in the study group and control group, respectively. This difference was found to be statistically significant (95% confidence interval -2.66 to -1.01, p<0.0001).

CONCLUSION: Based on this analysis, administering IV fluids and pain medication within 1 hour of ED arrival for patients presenting with vaso-occlusive crisis to the ED had a statistically significant impact on patient’s ED length of stay.

PL VII-12
EVALUATION OF RAPID INTRAVENOUS TO ORAL CONVERSION OF ANTIBIOTICS IN THE EMERGENCY DEPARTMENT. Erica Helen Rath, Craig Cocchio, Amy Martin, Justin Hooper. CHRISTUS Trinity Mother Frances Hospital. Tyler, TX.

PURPOSE: To determine if switching low acuity patients from an intravenous antibiotic to an oral antibiotic decreases time to discharge from the emergency department. Pharmacokinetics support the safety of switching these patients. Differences observed seek to confirm the efficacy of this new practice.

METHODS: The electronic medical record system, Epic, will identify patients meeting inclusion criteria at the point of intravenous antibiotic ordering. A best practice advisory (BPA) will prompt the physician, at time of order entry, to select an equally bioavailable oral alternative. Retrospective data is collected from the institution’s electronic records comparing length of emergency
RESULTS: An interim analysis was performed with 227 patients. The length of stay for a patient that received oral antibiotics was 31 minutes shorter (p=0.21) than for patients that received intravenous antibiotics. The BPA was followed in 33 (14%) of the total 227 total alerts. The 3 most common antibiotics for which the route was changed to oral were ceftriaxone, azithromycin, and levofloxacin.

CONCLUSION: Based on the interim data, the rapid conversion of intravenous antibiotics to oral antibiotics decreases the length of stay in the emergency room by 31 minutes.

PL VII-13
RATE OF PATIENTS AT ELEVATED RISK OF OPIOID OVERDOSE VISITING THE EMERGENCY DEPARTMENT. Justin R. Pedigo, Charles F. Seifert, Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

PURPOSE: To determine the rate of patients visiting the emergency center who are at risk of opioid overdose.

METHODS: The institutions electronic records were searched for all ED visits from October 1, 2011-October 31, 2016 in order to find patients with 100 milligram morphine equivalents (MME) or more of opioid therapy, or an opioid in combination with benzodiazepine, on their home medication list upon visiting the emergency center. Records were also searched for patients who had a positive urinalysis for opioids when no opioid was present on their home medication list. Discharge medication reconciliations were searched to determine if a naloxone prescription was written for high risk patients upon discharge.

RESULTS: An analysis of 2,537 patients visiting the emergency center was performed. Overall, 739 (29.13%) of 2,537 patients visiting the emergency center were determined to be at risk of opioid overdose.

CONCLUSION: Preliminary data suggests emergency centers may potentially be used to identify patients at risk of opioid overdose.

VIIC – EMERGENCY MEDICINE & PALLIATIVE CARE/PAIN MGT

PL VII-14
EVALUATION OF INITIAL WEIGHT BASED DOSING OF VANCOMYCIN IN THE EMERGENCY DEPARTMENT ON TIME TO THERAPEUTIC TRough IN CRITICALLY ILL PATIENTS. Katherine Weigartz, Kathryn Astle, Ashley Selby, Amanda Storer; University Health Shreveport, Shreveport, LA.

PURPOSE: Current vancomycin guidelines recommend administering a weight based loading dose (25-30 mg/kg) followed by a maintenance dose (15-20 mg/kg) for critically ill patients to provide therapeutic trough levels between 15-20 mg/L. Patients with vancomycin trough less than 10 are at increased risk of bacterial resistance to vancomycin. Initial vancomycin dosing in the emergency department often fall below the minimum recommended 15-20 mg/kg. This study will evaluate the time to therapeutic trough and hospital length of stay for critically ill patients initiated on vancomycin doses greater than or equal to 15 mg/kg and those whose doses were less than 15 mg/kg.

METHODS: The purpose of this study was to evaluate the effect of initial vancomycin doses on time to therapeutic trough. This was a retrospective chart review including patients that received vancomycin in the emergency department for suspected bacteremia, meningitis, pneumonia, or skin soft tissue infection (excluding cellulitis). Data collection included age, gender, weight, height, BMI, serum creatinine, baseline calculated creatinine clearance, diagnosis/suspected infection, initial weight based vancomycin dose, first vancomycin trough, hospital length of stay, admission unit, administration and trough times of vancomycin, adverse outcomes such as death, kidney failure/dialysis and acute kidney injury, and other potentially intravenous nephrotoxic medications administered including piperacillin-tazobactam, amphotericin, and acyclovir. Descriptive statistics were used to compare baseline patient variables and results. This study was approved by the Institutional Review Board.

RESULTS: Over 6 months, 336 patients were screened and 77 patients met inclusion criteria. Baseline characteristics between the two groups were similar. 27 patients received treatment for sepsis, 28 for pneumonia, 26 for osteomyelitis, and 4 for meningitis. 57 out of 77 patients received concurrent antibiotic therapy with piperacillin-tazobactam. Only 17 patients were admitted to the ICU, 8 in the ≥ 15 mg/kg group and 9 in the < 15 mg/kg group. When analyzing first documented vancomycin trough, 20 patients (62.5%) in the ≥ 15 mg/kg were sub-therapeutic compared to 25 patients (55.6%) in the < 15 mg/kg group. Therapeutic first vancomycin troughs were documented in 10 (31.25%) of ≥ 15 mg/kg group and 11 (24.4%) of the < 15 mg/kg group. Sub-therapeutic troughs occurred in 2 (6.25%) patients in the ≥ 15 mg/kg group and 9 (20%) patients in the < 15 mg/kg group. Adverse outcomes only occurred in the < 15 mg/kg group, 4 patients experienced AKI and 1 patient died. The average length of stay was 7.5 days in the > 15 mg/kg group and 9 days in the < 15 mg/kg group.

CONCLUSION: Initial vancomycin doses in the emergency department ≥ 15 mg/kg for critically ill patients resulted in a greater percentage of patients with a therapeutic initial vancomycin trough and a shorter hospital length of stay.

PL VII-15
BREAKING THE HABIT: DECREASING INAPPROPRIATE OPIOID USE IN THE EMERGENCY CENTER. Melanie St. Pierre, Katy Toale; The University of Texas MD Anderson Cancer Center, Houston, TX.

PURPOSE: Prescription opioid misuse and abuse is a growing public health concern in the United States that is responsible for significant morbidity and mortality; emergency department (ED) physicians are among the top prescribers of prescription opioids. Headache and neuropathic pain are two pain conditions that commonly lead patients to present to the ED. These pain conditions are often initially treated with opioids; however, evidence
suggests that this may not be appropriate. The aim of our study is to decrease the amount of morphine and hydromorphone used for the treatment of headache and neuropathic pain in patients presenting to the ED at a comprehensive cancer center.

**METHODS:** We performed a retrospective analysis from March 2016 to September 2016, on 167 adult patients (≥18 years) presenting to the emergency center (EC) at The University of Texas MD Anderson Cancer Center with a chief complaint of headache and/or neuropathic pain. Utilization rates of morphine and hydromorphone as well as non-opioids used in these two pain conditions were calculated and analyzed. Evidence-based algorithms were created for the proper management of headache and neuropathic pain utilizing non-opioids and reviewed with all EC providers. Data will be analyzed after implementation of the treatment algorithms and education to determine the change in opioid utilization rates for these pain conditions.

**RESULTS:** Results pending follow-up data collection.

**CONCLUSION:** We anticipate that pharmacist-led education will result in a reduction in the amount of opioids inappropriately utilized in the EC for headache and neuropathic pain.

**PL VII-16 ADDITION OF A PHARMACIST IN THE MANAGEMENT OF SEPTIC PATIENTS IN THE EMERGENCY DEPARTMENT.** Sameer K. Afghani, Michael J. Olmos, Patricia B. Newcomb, David M. Spear, Texas Health Harris Methodist Fort Worth, Fort Worth, TX.

**Purpose:** To evaluate the impact of a pharmacist in the management of septic patients in the emergency department (ED) at a large, level-2 trauma center in Fort Worth, TX. Our goal is to see if a pharmacist could assist in reducing the time-to-administration of first intravenous antibiotics from admission and from the order and impact length-of-stay and in-hospital mortality.

**Methods:** We retrospectively reviewed our prospectively maintained database which consisted of patients from May 1, 2016, to March 31, 2017, who were presumed to be septic. Patients were included as part of the study population if a physician had ordered off of the institutional sepsis three-hour bundle order set; had a diagnosis of sepsis based on ICD-9 coding; or had a listed diagnosis of sepsis as part of the differential diagnosis in the physician’s note.

**Results:** 66 patients have had pharmacist intervention (experimental group) and 323 patients have not had pharmacist intervention (control group) in the management of their septic condition. The mean time-to-first-antibiotic from admission for the experimental group was 77 minutes versus 149 minutes for the control group (p<0.001). The mean time-to-administration of antibiotics from order was 32 minutes in the experimental group versus 62 minutes in the control group (p=0.0012). The mean length-of-stay for the experimental group was 9.5 days versus 7.9 days for the control group.

**Conclusion:** Pharmacist intervention in the ED for septic patients resulted in a significant decline in the mean time-to-administration of first intravenous antibiotics from admission and order. Further studies are necessary to evaluate in-hospital mortality and length-of-stay and are currently ongoing.

**PL VII-17 IMPACT OF ALVIMOPAN WITH OR WITHOUT LIPOSOMAL BUPIVACAINE ON LENGTH OF STAY AND OPIOID UTILIZATION IN COLORECTAL SURGERY PATIENTS.** Kristin L. Howell, Carli Nesheiwat, Brandi LaFrance, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

**PURPOSE:** Opioid utilization postoperatively for colorectal surgery provides acute pain relief, but is associated with complications such as postoperative ileus (POI). Alvimopan, a mu-opioid receptor antagonist, works to prevent POI by blocking opioid gastrointestinal effects, without antagonizing central analgesia. Liposomal bupivacaine (LB), indicated for single-dose administration into the surgical site after the procedure, provides local postoperative analgesia. Alvimopan alone has been studied in colorectal patients; however, the impact of alvimopan with LB is unknown at our institution. The purpose of this study is to evaluate alvimopan with or without LB on postoperative outcomes of colorectal surgery.

**METHODS:** This retrospective, single-center study compares the impact of alvimopan with and without liposomal bupivacaine on postoperative outcomes, including postoperative length of stay and opioid consumption. Data was retrospectively collected through electronic medical records and generated financial reports. There were 194 patients total identified from January 2013 to June 2016 who underwent major small and large bowel procedures and received alvimopan, 111 of which also received liposomal bupivacaine. The following data was collected: patient age, gender, weight, height, race, postoperative length of stay, total length of stay, opioid consumption, non-opioid analgesic consumption, comorbidities, and readmission if applicable.

**RESULTS:** In progress.

**CONCLUSION:** In progress.

**PL VII-18 IMPACT OF RESCHEDULING OF HYDROCODONE COMBINATION PRODUCTS FROM SCHEDULE III TO SCHEDULE II ON PATIENT PAIN MANAGEMENT.** Cindy Adibe, Erika Bergeron, Jason Lionetti, Krupa Patel, Michael George, Sara Ruppelt, Harris Health System, Houston, TX.

**PURPOSE:** Effective October 6, 2014, all hydrocodone combination products were rescheduled by the DEA from Schedule III to Schedule II in an effort to combat prescription drug abuse. These prescriptions must be written on a DPS official prescription form and no refills may be authorized. A previous study showed that this rescheduling decreased the hydrocodone prescribing habits of physicians at Harris Health System. More physicians are prescribing tramadol and acetaminophen-codeine no. 3 instead of hydrocodone for pain management. Given the change in prescribing habits, we are assessing the impact
on patient pain management and the financial impact on the institution.

METHODS: This study was approved by the Institutional Review Board (IRB) for research. The monthly electronic medical record reports for outpatient controlled substance prescribing will be reviewed from October 2012 to December 2012 and October 2015 to December 2015. These two sets of data will be compared to ensure that the reports measure equal time periods before and after the rescheduling of hydrocodone. Patients will be included if they were discharged from Ben Taub or Lyndon B. Johnson Emergency Center during these time periods, and were prescribed at least one analgesic controlled substance in a solid oral dosage form (i.e. tablets, capsules). Patients will be excluded if they have a documented history of drug-seeking behavior. The following data will be collected and included in the analysis: patient age, gender, ethnicity, the prescribed analgesic and other current medications, the indication for the analgesic, and the number of pain-related primary care visits after the initial emergency center visit. All data will be used to assess the potential impact on patients’ pain control, evaluate the financial impact on the institution, and explore cost-savings pain management alternatives. The measurable data will be categorized based on the number of pain-related visits and the cost to the institution.

RESULTS: Pending

CONCLUSION: Pending

PL VII-19
THE ASCVD RISK ESTIMATOR: PRIMARY CARE PHYSICIAN PERCEPTIONS AND THE IMPACT ON MEDICARE ADVANTAGE BENEFICIARIES. Scarlett Najera, Tara Esse, Omar Serna, Aisha Vadhamiya, Marc Fleming, Susan Abughosh, Cigna-HealthSpring, University of Houston College of Pharmacy, Houston, TX

BACKGROUND: Primary care physicians (PCPs) are the first point of medical contact for most patients. Numerous tools have been developed to adequately assist health care professionals in providing quality care for their patients. One such tool is the American College of Cardiology/American Heart Association (ACC/AHA) Atherosclerotic Cardiovascular Disease (ASCVD) risk estimator. The ASCVD risk estimator assesses the 10-year and lifetime risks for ASCVD (defined as coronary death or nonfatal MI) as well as fatal or nonfatal stroke, greatly assisting providers in managing high risk cardiovascular disease (CVD) patients. However, the variation in the awareness of the ASCVD risk estimator with PCP and practice characteristic has not been adequately evaluated.

OBJECTIVES: To assess overall PCP awareness and perceptions of the ASCVD risk estimator as well as to investigate the variation in awareness by PCP and practice characteristics within a Texas-based Medicare Advantage Plan (MAP).

METHODS: A survey was developed and administered to MAP-contracted PCPs across Texas during their individual all-PCP quarterly meetings in July 2016. The survey included questions about overall awareness of the ASCVD risk estimator as well as the predominant socioeconomic status of their patient population (upper, middle or indigent population). Demographic and practice variables such as gender, race, ethnicity, age, years in practice and specialty of the physician were collected from the health plan data base and/or the Texas Medical Board website. Physician responses were summarized as percentages, and group differences were evaluated using chi square tests for categorical variables as well as t-tests for continuous variables.

RESULTS: Of 215 PCPs surveyed, 214 physicians were either from the Southeast or Southwest Texas regions. Among those surveyed, more than 40% indicated that they were unaware of the ASCVD risk estimator. Physicians treating mostly an indigent patient population were significantly more aware of the risk estimator compared to those treating mostly middle and upper class patient populations. Associations of other PCP and practice characteristics with awareness of the ASCVD risk estimator were insignificant.

CONCLUSION: Overall, a relatively high percentage of PCPs were unaware of the ASCVD risk estimator (40%), indicating a need for education about such tools, especially as it pertains to improving patient care in high risk CVD patients. The socioeconomic status of the patient population was the only PCP or practice characteristic significantly associated with awareness of the ASCVD risk estimator. PCPs treating indigent CVD patients may possibly be more aware of the risk estimator because they may be treating high risk patients and are looking for tools to aid them in their management.

SPONSORSHIP: Cigna-HealthSpring, University of Houston College of Pharmacy

VIIIA – AMBULATORY CARE

PL VIII-1
ANALYSIS OF REFERRALS TO AND INTERVENTIONS IMPLEMENTED BY PHARMACY PRACTICE RESIDENTS WITHIN THE PRIMARY CARE CENTER OF EXCELLENCE AT A VETERANS AFFAIRS TEACHING HOSPITAL. Kathleen M. Athern, Richard Cadle, and Sonya Wilmer; Michael E. DeBakey VA Medical Center, Houston, TX

Purpose: The Center of Excellence in Primary Care Education (CoEPCE) is an innovative clinic present in several Veterans Affairs hospitals currently. By incorporating trainees from several backgrounds of health care, the CoEPCE aims to expand the presence of interprofessional education into post-graduate training. While the CoEPCE is present at several hospitals, incorporation of pharmacy practice residents within this clinic has varied between locations. The goal of this project is to qualify the impact of pharmacy practice residents within this clinic has varied between locations. The goal of this project is to qualify the impact of pharmacy practice residents at the Michael E. DeBakey VA CoEPCE and to draw conclusions from the results for effective utilization of the residents in the future.

Methods: A quality improvement study will be completed to analyze referrals to and subsequent interventions initiated by pharmacy practice residents within the CoEPCE from October 2016 to March 2017. Using the electronic record system within the VA (CPRS) and the pharmacist intervention tracking tool (PhARMD), a retrospective chart review will be completed focusing on the patients seen by pharmacy practice residents and the interventions initiated thereafter. The primary outcome of this project is the analysis of interventions implemented
which includes identifying the initiation or discontinuation of pharmacotherapy, adjustment of medication doses, and initiation of non-pharmacological lifestyle interventions. Secondary outcomes will include the type of follow-up completed by the resident, the number of follow-up interactions with the patient, number of interventions initiated for disease states that were not the primary reason for referral, time to goal of therapy, and identification of the referral requestor. In addition, a cost-reduction analysis will be completed and the outcomes will be assessed using descriptive analysis. Following the identification of this information, conclusions will be drawn on the proper utilization of the pharmacy practice resident within the CoEPCE.

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

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


PURPOSE: Hospital discharge visits are an important part of the transitional care process, and they present an opportunity for pharmacists to identify drug therapy problems. Studies have shown that readmission rates for patients with medication discrepancies are twice as high as those observed in patients without medication discrepancies. The purpose of this study is to identify the average number of drug therapy problems a pharmacist can identify per patient during hospital discharge follow-up visits. The types of drug therapy interventions will also be analyzed. The secondary outcome will be the number of patients that were readmitted within 30 days of the hospital discharge visit.

METHODS: Patients will be scheduled for a hospital discharge follow-up visit at a family medicine clinic. During the first 10 minutes of the visit, the pharmacist will perform a complete medication review to identify potential drug therapy problems and medication discrepancies, provide patient education, and make recommendations to the physician if drug therapy modifications are needed. The pharmacist will document all interventions in the patient’s electronic medication record, and the data for these will be compiled for every patient. The number of interventions performed during these visits will be counted, and they will be averaged over the number of patients seen during the study period. The study’s secondary outcome will be the number of readmission rates among this group of patients. Furthermore, data collected from patients who are readmitted will be analyzed in order to find potential risk factors for hospital readmission.

RESULTS: Data collection is ongoing. The results will be presented.

CONCLUSION: Medication reviews conducted by pharmacists at hospital discharge follow-up visits have the potential to resolve drug therapy problems that increase patient safety.

PL VIII-3 EVALUATION OF PHARMACIST-MANAGED INSULIN THERAPY USING TELEHEALTH GLUCOMETER TECHNOLOGY: Stephen Liu, Karlye Trevino, Laura Sample, Sara DeJong, CHRISTUS Spohn Health System, Corpus Christi, TX.

Purpose: Telehealth glucometer technology transmits home blood glucose readings to a web-based software that is accessed with an assigned username and password. This allows the provider to monitor patient blood glucose levels and titrate therapy on a more frequent basis; however, this technology is underutilized, as providers currently review the data just prior to clinic visits and not between them. The underutilization creates an opportunity for pharmacists to more closely monitor blood glucose levels and to optimize therapy. The objective of this prospective study is to evaluate the feasibility and benefit of having a pharmacist titrate insulin therapy in-between provider visits.

Methods: This 3-month prospective study will include patients who already use telehealth glucometer technology and insulin therapy, follow with the CHRISTUS Spohn outpatient clinic for management of their diabetes, and have been admitted to the hospital within the past year with a primary diagnosis of uncontrolled diabetes. Patients in the control group will have their insulin titrated by the physician (standard of care), and those in the experimental group will have their insulin titrated by the pharmacist. Patients who have consented will attend an initial clinic visit with the pharmacist to establish care. This will include an assessment of baseline glycemic control and explanation of the pharmacist’s role using the telehealth glucometer system. Thereafter, the pharmacist will schedule weekly telephone follow-up to review blood glucose levels, diet, and exercise, as well as implement any insulin dose changes. The primary endpoint will be the difference in A1c prior to and after pharmacist intervention. Secondary outcomes include the difference in mean fasting glucose between the first and last weeks in the study, incidence of readmission for uncontrolled diabetes, and patient compliance with glucometer use and appointments, and total amount of time (in hours) spent managing therapy per week by the pharmacist.

Results: Pending

Conclusion: N/A
PL VIII-4
IMPACT OF SWITCHING PATIENTS WITH DIABETES IN THE AMBULATORY CARE SETTING ON INSULIN VIAL TO INSULIN PEN THERAPY WITHIN A COUNTY-OWNED HEALTHCARE SYSTEM. Rene Banzuelo, Jerry Wong, Mike George, Sara Ruppelt, Goldina Erowele, Cesar Munoz. Harris Health System, Houston, TX.

PURPOSE: To evaluate the clinical outcomes and economic impact of converting patients with uncontrolled diabetes in a county-owned healthcare system from insulin vials to insulin pen therapy. Prior to March 1, 2016 in addition to other insulin products, insulin glargine (Lantus®) vials were available for use in patients with diabetes system-wide. However, due to rising costs, the Pharmacy & Therapeutics Committee in collaboration with Endocrinology made a therapeutic formulary switch to insulin detemir (FlexTouch®) pen therapy.

METHODS: Using data obtained from the institution’s Information Technology department, we assessed the hemoglobin A1c change of patients being converted from insulin vials to insulin pen therapy and evaluated the institution cost regarding insulin vials vs. insulin pens. We also assessed medication compliance and assessed patient satisfaction with the conversion of insulin vial to insulin pen therapy.

RESULTS: An analysis of 23 patients was performed. There was no difference in hemoglobin A1c between insulin vials and insulin pen therapy thus far. Adherence, as calculated by Medication Possession Ration (MPR), was no different between insulin vial and pen therapy. The 1 month cost of insulin pen therapy ($0.11) was significantly cheaper than insulin vial therapy ($17.20, p = 0.044). Less units of insulin were used daily (basal + short acting therapy) in pen therapy compared to vial therapy (38 units and 69 units, respectively, p = 0009). 100% of patients that responded to the satisfaction survey (n = 13) expressed that insulin pens were an improvement over insulin vials.

CONCLUSION: Insulin pens are well received and are cheaper compared to insulin vial therapy, but there has not been a difference in hemoglobin A1c between the two groups. Titrating the insulin pen dose (basal + short acting therapy) more may be needed to see appreciable differences in A1c.

PL VIII-5
EVALUATING THE CHANGE IN BENZODIAZEPINE USE IN VETERANS ON BOTH AN OPIOID AND BENZODIAZEPINE OR A BENZODIAZEPINE ALONE AFTER Sending an Educational Self-Taper Letter. Cynthia Bartha, John Hoyng, Tyson Kubena, West Texas Veterans Affairs Healthcare System, Big Spring, TX.

Purpose: Concomitant opioid and benzodiazepine use has been associated with an increase in the risk of death and severe adverse events. The EMPOWER study has demonstrated a decrease in benzodiazepine use when patients were mailed a letter containing information describing benzodiazepines and strategies for discontinuation. The primary objective of this quality improvement project is to evaluate the change in benzodiazepine use in veterans on both an opioid and benzodiazepine or a benzodiazepine alone after receiving an educational letter describing benzodiazepines. The secondary objectives are to determine the most commonly prescribed benzodiazepine, diazepam equivalents prescribed, and indication for use.

Methods: The Pharmacy and Therapeutics committee approved a retrospective review of patients on both opioids and benzodiazepines or benzodiazepines alone to determine if there was a change in benzodiazepine use after an educational letter containing information for benzodiazepines on self-tapering was sent to the patient. The educational letter was sent in March 2016 to patients on an opioid and benzodiazepine and in August 2016 to patients on only a benzodiazepine. Data was accessed through a structured query language (SQL) report for those patients who were sent the letter. A benzodiazepine taper was deemed complete if the benzodiazepine was not filled within at least six months from the letter being sent. A decrease in benzodiazepine use was measured by the total number of patients on benzodiazepines before and after the letter as a percentage of the total population.

Results: Analysis of patients on an opioid and benzodiazepine (n=328) was performed 9 months after the self-taper letter was sent. A 19.8% decrease in patients on an opioid and a benzodiazepine was discovered 9 months after the letter was sent. Of patients unable to taper the benzodiazepine (n=263), data on patient characteristics was obtained. The most common indication for benzodiazepine use was anxiety (70%) with alprazolam being the mostly commonly prescribed (35%). Average diazepam equivalents were 11.3 mg daily with 69% of prescriptions written for as needed use. Of the 263 patients unable to taper, 40% have a diagnosis of PTSD and 9% have a substance use disorder diagnosis. Data on patients prescribed a benzodiazepine alone will be analyzed after at least 6 months have elapsed from the date the letter was sent and will be available on 3/31/2017.

Conclusion: Based on analysis of patients receiving an opioid and a benzodiazepine who received a self-taper letter, the educational self-taper letter may have contributed to a decrease in benzodiazepine use.

PL VIII-6
IMPACT OF CLINICAL PHARMACY CASE MANAGEMENT ON TIME TO TREATMENT AND SVR-12 RATES FOR DIAGNOSED HEPATITIS C PATIENTS. Mertessa Espejo, Tyson Kubena, Chantal Kneifel, Wendy Brown, West Texas Veteran Affairs Heath Care System, Big Spring, TX.

Purpose: Advances in hepatitis C (HCV) therapy with direct-acting antivirals (DAAs) afford a curative goal contingent upon timely and sustained access to care. The clinical pharmacy hepatitis C (HCV) clinic at the West Texas VA Health Care System (WTVAHCS) was developed to meet the needs of evolving practice to improve linkage to care. The purpose of this review is to evaluate the impact that the clinical pharmacy HCV clinic has had on time to treatment (TTT) for WTVAHCS patients and compare the 12-week sustained virologic response (SVR-12) achieved against the current reported national average cure rate with direct acting antiviral (DAA) therapy.

Methods: This quality improvement project was approved by the WTVAHCS pharmacy and therapeutics committee. A retrospective review evaluated time from...
initial Hepatitis C consult to receipt of DAA therapy for WTVAHCS Hepatitis C patients. A Computerized Patient Record System (CPRS) medication record review identified WTVAHCS HCV patients who received DAA from the onsite pharmacy. The timeframe evaluated for comparison included two years prior to the opening of the Hepatitis C clinic (April 1, 2014 – April 1, 2016) through the opening of the HCV clinic (April 1, 2016 – July 31, 2016). Time to treatment (TTT) achieved by the HCV clinic was compared to that of prior case management modalities. Data collection for the primary analysis included the date of Hepatitis C CPRS consult and the date of first prescription filled for HCV DAA. Secondary analysis evaluated the SVR-12 rates achieved by the WTVAHCS HCV clinic by February 24, 2017 as compared to the current 95% cure rate national average with direct acting antiviral (DAA) therapy.

**RESULTS:** Primary outcome: A total of 133 patients were included for TTT analysis (traditional case management N=52; WTVAHCS HCV clinic N=81). The average TTT for the traditional case management group was 153 days (max=699; min=3) and 9 days for the WTVAHCS HCV clinic (max=23; min=1). Secondary outcome: A total of 139 patients were managed by the WTVAHCS HCV clinic at the time of review (April 1, 2016 – February 23, 2017). SVR-12 rates were not available for 19 patients who were excluded from analysis: testing results pending at time of review (N=11), did not complete treatment (N=8). A total of 120 patients were included in the final analysis with a 98% SVR-12 rate achieved within the 1st year of opening the WTVAHCS HCV clinic: HCV RNA Not Detected (N=117); HCV RNA Detected (N=2); lost to follow-up (N=1).

**CONCLUSIONS:** The WTVAHCS pharmacy-run HCV clinic reduced TTT compared to traditional case management modalities and afforded HCV SVR-12 rates for uncomplicated patients treated with DAAAs comparable to national averages. Clinical pharmacy services which include patient-centered education and follow-up can contribute to optimized HCV cure rates.

**VIIB – AMBULATORY CARE**

**PL VIII-7**
**ASSESSING PATIENTS’ IMPROVEMENT IN DIABETES NUMERACY SKILLS AFTER ONE PHARMACIST-LED EDUCATIONAL SESSION.** Rose Mary Duchane, Janel Bailey-Wheeler, Daniel Sarpong, Martha Harris, Tammy Hart, Xavier University of Louisiana, New Orleans, LA.

**Purpose:** Numeracy is an important element of literacy and is defined as the ability to understand and use numbers in everyday life. Having adequate numeracy skills is crucial in diabetic patients to interpret glucometer results, properly administer medications, and adhere to diabetic diet; and pharmacists can intervene in these three areas. Previous studies assessed numeracy skills of patients enrolled in a long-term diabetes program and showed that patients with higher numeracy scores tend to have better glycemic control. The objective of this study is to determine if one educational session with the pharmacist will improve numeracy skills.

**Methods:** This single-center, prospective, pre-and post-intervention study will be submitted to the Xavier University of Louisiana Institutional Review Board for approval and will be conducted in a community setting in New Orleans, Louisiana. The study sample will include patients at least 18 years old with Type 1 or 2 diabetes who take at least one diabetic medication. Patients who have a corrected visual acuity of 20/50 or greater as determined using Rosenbaum pocket screener will be excluded. The validated Diabetes Numeracy Test-5 (DNT-5) is a 5-item survey that assesses nutrition, exercise, blood glucose monitoring, and medication use. Study participants, at baseline, will be administered the DNT-5 survey. In addition to the DNT-5, the following data will be ascertained: age, gender, race/ethnicity, income, comorbid conditions, duration of diabetes, previous diabetes education, and list of medications. Patients will participate in an education session that covers modules from the Diabetes Literacy and Numeracy Toolkit corresponding to the DNT-5. Patients will retake the DNT-5 as a post-test. All data will be recorded without patient identifiers and maintained confidentially. Paired T-test will be used to assess changes in DNT-5 scores pre- and post-intervention. Analysis of Variance will be used to compare DNT-5 scores adjusted for factors mentioned above. All statistical tests will be performed at a significance level of 0.05 using SAS 9.4.1.

**Results:** N/A

**Conclusion:** N/A
discharge. Patients then received a follow up phone call 30 days after the last pharmacist visit. Pharmacists provided medication reconciliation, medication management, and/or medication education services during the visits. All patients that are ≥ 18 years of age, diagnosed with at least one chronic disease, and taking at least two prescription medications were included in the study. Patients discharged to hospice, nursing homes or assisted living facilities were excluded. Data collection includes 30-day hospital readmission rates, 30-day emergency department visits, medication adherence calculated by prescription pick up status, and types of interventions made the pharmacy team.

**Results:** Data collection is pending.

**Conclusion:** Several well documented studies have illustrated the benefits of the pharmacist’s role in providing transition of care services. Pharmacist-based transition of care program, may improve patients’ overall health and reduce readmissions rates.

**PL VIII-9**

**THE IMPACT OF INTERDISCIPLINARY COLLABORATION AND INTEGRATIVE HEALTH COACHING FOR PATIENTS WITH DIABETES WITH OR WITHOUT HYPERTENSION IN A CHARITY OUTPATIENT CLINIC: A PROSPECTIVE STUDY.** Rolake Kuye, Cecilia Hui, Amulya Tatakhar, Baylor Scott and White Health, Dallas, TX.

**PURPOSE:** In January 2016, pharmacists, nurse practitioners, community health workers, and providers at Baylor Scott & White Community Care charity clinics collaborated to provide interdisciplinary services to uncontrolled diabetics. The service was designed to not only manage medications but also to cultivate patient engagement through health coaching. The purpose of this study is to examine the impact of interdisciplinary collaboration and health coaching in poorly controlled diabetic patients with or without hypertension at Baylor Community Care outpatient clinics.

**METHODS:** This is a multicenter prospective chart review of patients that are referred by their primary care provider to the interdisciplinary team. All patients are 18 years or older with an HbA1c >9 with or without a diagnosis of hypertension per JNC8 guidelines. Patients with a diagnoses of type 1 diabetes are excluded. Referred patients are managed by an interdisciplinary team consisting of pharmacists, nurses trained in health coaching, and/or community health workers. Patients are consistently seen by the pharmacist for medication management and patient education. The nurse or community health worker meets with patients on an as needed basis for lifestyle modification education. In addition, the nurse or community health worker in conjunction with the pharmacist conduct joint or separate visits focusing on health coaching. The patient’s provider is consulted verbally or through written documentation for approval of medication recommendations. Follow-up continues by the pharmacist after the patient has achieved therapeutic goals to ensure sustained achievement of goals. The primary outcome is HbA1c post-interdisciplinary team intervention. Secondary objectives include blood pressure, patient engagement measured by a patient activation measure survey, pharmacist intervention of the following preventative care measures: statin, antiplaquelet, angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB), pneumonia and flu vaccinations post-interdisciplinary intervention. The Institutional Review Board reviewed and approved this study.

**RESULTS:** Data collection and analysis is currently on-going.

**CONCLUSION:** Data collection is on-going and conclusions are pending completing analysis. Based on interim data, interdisciplinary interventions seem to improve HbA1c measures.

**PL VIII-10**

**MEDICARE ADVANTAGE PATIENT PERCEPTIONS OF A DIABETES SELF-MANAGEMENT PROGRAM.** Blessing Adode1, Tara Esse1, Omar Serna1, Olga Oviedo2, Susan Abughosh3, Xin Wang4, Cigna-HealthSpring, UHCOP, Houston, TX.

**PURPOSE:** To (a) determine Medicare Advantage Plan (MAP) patient satisfaction of a piloted, geographically-focused diabetes self-management education program, the Diabetes Empowerment Education Program (DEEP), leading to behavior change as well as to (b) investigate patient diabetic outcomes post program based on Hemoglobin (Hb) A1c values.

**METHODS:** A survey was administered to MAP patients who completed the program to assess their satisfaction of DEEP in El Paso and 5 regions of South Texas. Demographic variables were acquired. The survey contained 16 questions using Likert scale answer choices and free response, validated using past literature. Patient satisfaction of post-DEEP focused on 2 categories: post-behavioral changes impacting activities of daily living (e.g. medication adherence, diet) and better understanding of their disease. Pre- and post-HbA1c values were obtained from patient records and categorized as “achieving target” vs. “not achieving” using 8% as the threshold, determined by the 2016 HEDIS Comprehensive Diabetes Care as a marker for good control. Patient responses to questions were summarized overall and by demographics. Fisher’s exact tests were performed to determine any group differences in patient responses to behavioral changes with demographic variables. The McNemar chi square test was used to determine if there was a significant improvement in HbA1c target achievement post-DEEP.

**RESULTS:** A total of 149 patient surveys were mailed out and 45 surveys were returned (30%). Out of those 45 patient surveys, pre-DEEP and post-DEEP HbA1c values were obtained from 43 patients (95%). The study population consisted of patients between 50 – 85 years of age from 6 different geographic pharmacy physician practice locations. Among those responding, 66% were aged between 66 and 75, and 42% were male. Ethnicity included Hispanic and non-Hispanic, with the majority being of non-Hispanic origin (78%). The majority of patient responses (35%) returned came from the lower Rio Grande Valley area. In addition, the majority of responses for behavioral changes and patient understanding were skewed to positive spectrums of responses. For example, 43 patients positively responded that the DEEP class facilitator explained and answered questions in an easy to understand manner. Positive responses for medication adherence were
also observed, with 40 patients having reported adherence to their cholesterol medication and 41 patients reported adherence to their diabetic medications. There were no statistically significant differences observed between patient responses with demographic variables. A statistical significant difference in achieving HbA1C target was observed (p=0.0067) from pre- to post-DEEP: a total of 11 patients' HbA1c value were <8% pre-DEEP and 20 patients' HbA1c were <8% post-DEEP.

**CONCLUSION:** Overall, DEEP has been well received by patients and has shown improved clinical outcomes. The post-DEEP HbA1c values displayed positive results. DEEP was a new program rolled out by the MAP in January 2016. High patient satisfaction and observance of positive clinical outcomes could further promote future referrals from MAP-contracted providers, as well as serve to validate implementation in other markets within the MAP.

**PL VIII-12**

**PRESCRIBING PATTERNS OF HMG-COA REDUCTASE INHIBITORS.** Jacy Malone, Rachel Basinger, Texas Tech University School of Pharmacy, Amarillo, TX.

**PURPOSE:** To examine the adherence rates to the 2013 ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults of physicians within the Texas Tech Internal Medicine and Family Medicine clinics with respect to the prescribed intensity of HMG-CoA reductase inhibitors.

**METHODS:** A retrospective chart review was performed of patients who had been prescribed a HMG-CoA reductase inhibitor (statin) by one of the clinics’ attending physicians. Researchers assessed if the prescribed HMG-CoA reductase inhibitor was of appropriate intensity based on the Statin Benefit Group the patients qualify under per the 2013 ACC/AHA guidelines.

**RESULTS:** A total of 194 patients were included in the study – 121 patients from the Family Medicine (FM) clinic and 73 patients from the Internal Medicine (IM) clinic. No significant differences were noted in baseline characteristics between the two clinics except for smoking status. There were 104 patients who had been prescribed the correct intensity of HMG-CoA reductase inhibitor; interpreted as an overall adherence rate of 53.6%. Correct prescribed intensity was statistically significantly higher for FM patients than IM patients (61% vs. 41%, p = 0.007).

Sub-analysis of the prescribed intensity level suggests that the major difference with respect to statin adherence lies in prescription intensity being too low (21% vs. 41%) rather than too high (18%) between the two clinics.

**CONCLUSION:** Based on the data acquired through this study, adherence to the 2013 guidelines for prescribing HMG-CoA reductase inhibitors according to intensity is suboptimal within the Texas Tech clinics. The Internal Medicine clinic data demonstrates more room for improvement and may receive greater benefit from any future interventions.

**PL VIII-13**

**EVALUATING THE IMPACT OF A PHARMACY RESIDENT DRIVEN COEPCE CARE PLUS OUTPATIENT CLINIC AT THE MICHAEL E. DEBAKEY VA MEDICAL CENTER.** Amanda Jo Shiple, Richard Cadle, Sonya Wilmer, Ashley Adams, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

**Purpose:** The Center of Excellence in Primary Care Education (CoEPCE) is a pilot project within the Department of Veteran Affairs that is aimed to optimize interdisciplinary care provided by healthcare trainees. As part of the CoEPCE project, a care plus clinic will be established with the aim of providing a same day walk-in service that offers the opportunity to consult pharmacists without the need for a scheduled appointment. This is intended to improve the accessibility of a healthcare provider within the primary care setting to Veterans who may have a time sensitive medical condition or for additional pharmacologic education and management.

**Methods:** A quality improvement (QI) study will be completed to assess the effectiveness of a same day walk-in clinic within the CoEPCE. Data will be collected from October 1, 2016-February 28, 2017. The primary objective is to investigate the impact of pharmacy residents in the CoEPCE care plus clinic by assessing the type and average number of interventions per patient. The secondary objectives include the following: the primary reason for the walk in visit, the disease states managed, the average time of each visit, and patient characteristics, as well as, a cost prevention analysis. This QI project will utilize the VA electronic medical database (CPRS) and the VA outpatient intervention capturing tool (the PhARMD Tool) to investigate the specified objectives. Information collected will be assessed using appropriate statistics based on the descriptive data collected.

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

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

**VIIIIC – MEDICATION USE SAFETY, PHARMACY SYSTEMS & OPERATIONS**

**PL VIII-14**

**UTILIZATION OF A COMPUTERIZED SURVEILLANCE SYSTEM TO IMPROVE PEDIATRIC ANTIMICROBIAL STEWARDSHIP.** Jennifer Brasher, Chanin Wright, Amanda Williams, Stacey Lynch, Joseph B. Cantey, Lea Mallett, Char Peery, Baylor Scott & White McLane Children’s Medical Center, Temple, TX.

**Purpose:** There are a significant number of studies identifying the benefits of Antimicrobial Stewardship Programs (ASP) in adult hospitals, but considerably fewer are available for pediatric institutions. The purpose of this study is to evaluate the integration of MedMined® as a tool for improving the ASP of our clinical practice.

**Methods:** This study will be submitted to the IRB for approval. Prior to the evaluation of this tool, clinical
pharmacists at Baylor Scott & White McLane Children’s Medical Center were re-educated on the appropriate use and documentation within MedMined. The MedMined program will be used to identify patients on greater than 48 hours of antimicrobial therapy and pharmacists will evaluate the drug therapy for appropriateness and document their interventions. The primary outcome is categorizing and quantifying interventions made through the MedMined alert system over a six month period. The secondary outcomes for this study are change in drug cost and length of therapy per 1000 patient days for vancomycin, ceftriaxone, and piperacillin-tazobactam. The drug cost and length of therapy will be compared to the preceding year when MedMined was not in use.

RESULTS: To be disclosed.

CONCLUSION: Based on preliminary data, re-education of night-shift pharmacists may increase compliance with the institution’s renal dose-adjustment protocol. Cost-savings and pharmacist verification time data conclusions are pending further data analysis.

PL VIII-16
OCCURRENCE OF VANCOMYCIN-RELATED INFUSION REACTIONS FOLLOWING STANDARDIZATION OF INFUSION RATES. Sarah S. Cho, Nathan P. Fewel, Amanda B. Trimm, Eileen M. Stock, Central Texas Veterans Health Care System, Temple, TX.

PURPOSE: Red man syndrome (RMS), a rate-dependent infusion reaction, is a characteristic adverse reaction to vancomycin. While package inserts recommend no greater than 10mg/min, the 2009 vancomycin guidelines suggest that faster infusion rates may be appropriate, up to 30 minutes for every 500 mg administered. The purpose of this quality improvement project is to explore if an increase in the incidence of red man syndrome has occurred following an increase in vancomycin infusion rates at our health system, which previously ranged from 11 to 14mg/min to the current standardized rate of 16.7mg/min (15 minutes for 250mg given).

METHODS: This retrospective observational quality improvement project will be conducted at a single Veterans Affairs hospital in the Southwestern region of the U.S. Medical charts will be reviewed by searching for key words such as, but not limited to, “vanc,” “itch,” and “rash.” Hospitalized patients who received at least one dose of parenteral vancomycin will be included. Patients will be excluded if they initiated vancomycin preoperatively, received systemic steroids or antihistamines during vancomycin therapy, or received an extremely low outlier rate of 500mg over 60 minutes. The project will aim to include about 200 patients prior to implementation (from July to November, 2015), and about 200 patients after the change (from January to May, 2016). A statistician will use relative risk and confidence interval to compare the risk associated with the increased infusion rates.

RESULTS: N/A

CONCLUSION: N/A

PL VIII-17
THE STANDARDIZATION OF ADMISSION AND SPECIALTY ORDER SETS TO MINIMIZE DUPLICATE MEDICATION ORDERS. Victoria N. Felder, Jerri Cody, Debbie Poland, Norman Regional Health System, Norman, OK.

PURPOSE: To quantify the frequency of duplicate orders, identify medications frequently associated with duplicate orders, and analyze the impact of current physician practices utilizing order sets containing as needed medication orders.

METHODS: Using data retrospectively collected from the institutions electronic records, patients with more than one order for acetaminophen in a one week time period were assessed for number and type of order set used.
RESULTS: 841 orders for a total of 480 patients were analyzed; ultimately 69 patients were found to have two or more order sets that were ordered with duplicate acetaminophen orders, totaling 172 order sets. These were sorted into the following categories: the same physician ordering the same order set (9), the same physician ordering different order sets (39), different physicians ordering the same order set (15), and different physicians ordering different order sets (36). Patients with more than two order sets (23 patients), could fall into more than one category.

CONCLUSION: The duplication of medication orders via various order sets occurs frequently, with 107 excessive order sets ordered in a one week time period. This has the potential to lead to duplicate orders on the patient’s profile, potentially leading to medication errors such as multiple administration of the same medication. These excessive order sets also require additional pharmacist time to verify and ensure that patients do not have medications duplicated, which could be utilized elsewhere in the pharmacy.

PL VIII-18
OPTIMIZATION OF AUTOMATED DISPENSING CABINETS TO IMPROVE UTILIZATION AND EFFICIENCY OF DISPENSING WORKFLOW AT AN ACADEMIC MEDICAL CENTER. Tony Rudisill, Dick Cason, Regina L. Ramirez, UTMB Health, Galveston, TX.

Purpose: To evaluate automated dispensing cabinet (ADC) utilization rates and the impact of ADC optimization achieved through a series of medication stock modifications. The need for greater automated dispensing cabinet utilization was proposed by hospital leadership to improve the medication use process. Prior to optimization, the overall hospital ADC utilization rate was approximately 45%, a value that’s nearly half of what other academic medical centers in the United States report. Secondary endpoints will evaluate the trends of Patient Safety Net reports, cabinet stockout rates, in-basket messages, and medication redispenses.

Methods: Using retrospective data reported from the institution’s electronic health records and ADC systems, we analyzed dispensing data for 60 days pre- and post-optimization. Ten randomly selected ADCs were targeted for optimization. Each ADC was located within the Jennie Sealy Hospital at UTMB Health’s Galveston campus. The process of optimization included medication additions and removals, par level adjustments, and pocket relocations. Prior to optimization, the ten units had a combined utilization rate of 31%. Post-optimization analysis will occur March 2017.

PL VIII-19
EVALUATION OF AN ELECTRONIC DETECTION AND ACCUMULATION ALERT FOR RISK MITIGATION OF INADVERTENT ACETAMINOPEG OVERDOSAGE. Thomas Roduta, Patti Peymann Romeril, Memorial Hermann Health System, Houston, TX.

PURPOSE: To observe the impact of the electronic detection and accumulation alert on inadvertent acetaminophen overdose. To identify key factors that drive the alert to fire in an effort to minimize the amount of times the alert fires. Addressing top key factors will be essential in providing best practices and guidance for improving, deterring, and alerting of cumulative daily doses of acetaminophen. Hospital policy and prescriber training are needed to help clinicians monitor the cumulative daily dose of acetaminophen.

METHODS: A retrospective, observational study was conducted to determine the impact of an electronic detection and accumulation alert on inadvertent acetaminophen overdose. A detection and alert system that identified when a patient will be receiving more than four (4) grams of acetaminophen at the point of medication administration was implemented on November 16th, 2016. Alerts generated by the detection system within the Memorial Hermann Health System from October 17th, 2016 to November 16th, 2016 were retrospectively reviewed for baseline data. Post-implementation data from December 1st, 2016 to December 31st, 2016 was analyzed to determine differences from baseline data.

RESULTS: Optimizing use and integration of available technologies like a detection and accumulation alert has been proven to be effective; however, alert fatigue and override remains a particularly difficult challenge. Because of this, continuing education is essential to patient and medication safety. According to the NCPDP, special emphasis must be placed on the initial training and retraining of all patient care staff in addition to technology support. Data analysis is ongoing with expected completion in March 2017.

CONCLUSION: Conclusions pending final data analysis.

IXA – PHARMACOECONOMICS & CRITICAL CARE

PL IX-1
IMPLEMENTATION OF THE PROPOSED MEDICARE DIABETES PREVENTION PROGRAM (MDPP): A RETROSPECTIVE ANALYSIS OF REVENUE INCREASE BASED ON PHARMACIST-LED INTERVENTIONS. Erica Deshawn Watson, Sarah Amering, Kristi Isaac-Rapp, Candice M. Wilson, Xavier University of Louisiana College of Pharmacy, New Orleans, LA.

Abstract
Diabetes is growing at an exponential rate in both the United States and Louisiana. Individuals with prediabetes are at high risk for future development of diabetes which will result in poor health outcomes and increased costs. Studies have shown that implementation of the Medicare Diabetes Prevention Program resulted in the delayed
development of diabetes and led to the adoption of a new provider payment scheme. The objective of this study is to assess the revenue generated from pharmacist-led interventions upon implementation of the Medicare Diabetes Prevention Program. The study will also assess the development of diabetes in high-risk individuals who are receiving pharmacist-led individualized education sessions.

This study will be submitted to the Institutional Review Board for approval. The electronic medical record system will identify patients that have been diagnosed with prediabetes and are being managed by the pharmacist. Prediabetes will be defined as a hemoglobin A1C test with a value between 5.7% and 6.4%, or fasting plasma glucose of 100-125 mg/dL, or a 2-hour post glucose challenge of 140-199 mg/dL (oral glucose tolerance test). The following data will be collected: age, gender, race/ethnicity, body mass index (BMI), weight, blood pressure, hemoglobin A1C, current medications, number of visits, and co-morbid conditions. If available, occupation and education level will also be obtained. All data collected will be over an 18-month time period from which they were referred to the pharmacist. All data will be recorded without patient identifiers, coded and maintained confidentially. The data will then be evaluated to determine which patients achieved at least 5% weight loss from baseline. Estimated revenue will be determined based on the sessions attended for those individuals who achieved the minimum weight loss target. The data for all patients including those who have not met the weight loss requirement will be assessed to determine if they developed diabetes.

PL IX-2
IMPACT OF A HOME-BREWED DATA MINING TOOL ON TIME SPENT CONDUCTING CLINICAL PHARMACY RESEARCH. Bryan J. Donald, Benjamin Trinh, George Udeani, Corpus Christi Medical Center, Corpus Christi, TX.

PURPOSE: To assess the impact of a customized data analysis tool on researchers’ time when conducting chart review for clinical research by testing a home-brewed chart analysis tool on a research project dealing with sepsis scores. Without this tool, researchers would have to complete the time-intensive and error-prone process of manually calculating sepsis scores throughout patients’ visits. METHODS: Five patient charts were reviewed to determine the concurrent validity of sepsis scores. Most lab and vital sign values were downloaded as spreadsheets from a pharmacovigilance data mining tool. Other information was downloaded directly from the electronic medical record (EMR). For manual review, the investigator calculated sepsis scores for each chart update. For the data mining review, a script was written in the Python programming language to analyze lab and vital sign values and output sepsis scores as a spreadsheet. The time required to analyze each patient’s complete chart and errors committed were recorded. Times of less than 1 minute were recorded as 1 minute. RESULTS: An average of 3 minutes (95% CI: 1.61 – 4.93) was spent on data collection for each chart. Mean total collection and analysis time for the manual method was 33 minutes (95% CI: 13.95 – 52.05). All analysis for the data mining method was less than 1 minute; mean total collection and analysis time for the data mining method was 4 minutes (95% CI: 2.61 – 5.93). Generating the script took 6 hours, including testing and troubleshooting, so if this time is divided evenly between 5 chart reviews, the mean total development, collection, and analysis time for the data mining method was 75 minutes. A comparison of 450 manual and script-generated scores revealed 40/450 (8.9%) errors which affected sepsis scores compared to zero errors.

CONCLUSION: The total time required to use the home-brewed data mining tool for each patient was much less than the time required to calculate scores manually. Even when time spent developing the tool is included, the data mining method total time would fall below the manual method total time after 12 patients. The data mining tool also exposed errors in sepsis score calculation which may have affected the results of the research question being investigated.

PL IX-3
FACTORS ASSOCIATED WITH EARLY DISCONTINUATION OF LONG-ACTING REVERSIBLE CONTRACEPTIVES IN A COMMUNITY TEACHING FACILITY. Emily Allen-Vieira, Fancy Manton, Alexis Horace, Woman’s Hospital, Baton Rouge, LA.

PURPOSE: Long-acting reversible contraceptives (LARC’s) are highly recommended by The American College of Obstetrics and Gynecology for most women. The Contraceptive CHOICE Project reports that, compared to other methods, these devices have a high satisfaction rate and are associated with decreased unintended pregnancies. However, patients may occasionally request early removal of these devices. The goal of this study is to identify factors affecting early discontinuation of LARC’s in the local community.

METHODS: This study was approved by the Institutional Review Board. To determine study population, the electronic medical record will be accessed using ICD 9 and 10 codes for intrauterine device and implant (i.e. LARC) removals at Woman’s Hospital. We will further condense the data to identify early removals of LARC’s, defined as removal less than one year after insertion not related to expulsion. Once these patients are identified, we will conduct a retrospective review and the following data will be collected: reason for removal, product name, and timing of insertion from delivery (if applicable.) Additional information regarding patient demographics, number of pregnancies, educational level, etc. will be collected to determine influence on removal rates. All data will be recorded without patient identifiers and maintained confidentially. This information will be thoroughly analyzed by a team of clinicians to determine discontinuation rates and factors associated with early removal of LARC’s.

RESULTS: Research in progress.

CONCLUSION: Research in progress.
INCIDENCE OF DELIRIUM AND EVALUATION OF RISK FACTORS IN A CRITICALLY ILL VETERAN POPULATION. Elisabeth Sulaica, Shazia Raheem, Stephanie Bird, Charlie Lan, Natasha Becker, Louisa Chui, Uma Ayyala, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

PURPOSE: Delirium is estimated to occur in up to 80% of mechanically ventilated patients and is associated with an increased risk of mortality, time on mechanical ventilator, and a longer length of stay. There is limited data evaluating risk factors for delirium in the critically-ill veteran population. It is unknown if certain risk factors that are more prevalent in the veteran population (i.e. post-traumatic stress disorder in the veteran population is three times higher than the general population) increase the incidence of delirium in the intensive care unit (ICU). The purpose of this quality improvement project is to determine the incidence of delirium at the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC) and identify risk factors associated with development of delirium in critically-ill veterans.

METHODS: A retrospective chart review will be conducted on patients admitted to the medical or surgical ICU between December 1, 2016 to January 31, 2017. Inclusion criteria includes patients greater than 18 years old admitted to the medical intensive care unit (MICU) or surgical intensive care unit (SICU) for 48 hours or more with at least one Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) assessment. Exclusion criteria includes patients unable to participate in CAM-ICU. The incidence of delirium will be analyzed using descriptive analysis and the risk factors associated with delirium will be assessed using univariate and multivariate analysis. Secondary objectives will be analyzed using the chi-squared test, Fisher’s exact test or descriptive analysis.

RESULTS: Research in progress.

CONCLUSION: Research in progress.

EVALUATING THE CURRENT SEDATION PRACTICES ON MECHANICALLY VENTILATED ADULTS IN THE INTENSIVE CARE UNIT. Kathaleya Yindeemark, Malarvizhi Narayanan, Samuel Akinyele, Todd Kelly, Jennifer Steenburg, Memorial Hermann Southwest Hospital, Houston, TX.

BACKGROUND: Critically ill, mechanically ventilated patients require adequate sedation to optimize patient comfort and minimize unintended consequences of improper sedation. Over-sedation may lead to prolonged time on mechanical ventilation, while inadequate sedation may lead to pain, anxiety, and self-extubation. Current guidelines recommend targeting light sedation utilizing a sedation pathway that incorporates frequent assessment of pain, agitation, and delirium.

PURPOSE: The purpose of this study is to evaluate the current sedation practices on mechanically ventilated adults at Memorial Hermann Southwest Hospital’s medical and surgical intensive care unit.

METHODS: This is a retrospective, observational study conducted at a 629 bed community hospital. Data collected will include information recorded for 160 patients from August through October 2016. Patients were 18 years or older, admitted to the medical/surgical ICU, and mechanically ventilated for at least 24 hours will be included in the study. Patient charts will be reviewed for baseline characteristics, clinical outcomes, results and frequency of pain, agitation, and delirium assessment, and doses of sedatives, analgesics, and antipsychotic medications used during mechanical ventilation. Outcomes evaluated include duration of mechanical ventilation, hospital and ICU length of stay, in-hospital all-cause mortality, incidence of achieving target sedation, incidence of delirium, incidence of self-extubation, tracheostomy and ventilator associated events.

RESULTS: Research in progress

CONCLUSION: Research in progress.

FUROSEMIDE WITH OR WITHOUT 25% ALBUMIN IN THE DIURESIS OF CRITICALLY ILL PATIENTS WITH HYPOALBUMINEMIA. Kylie Ryan-Hummel, Conrado Gamboa, Elizabeth Hand, Andrew Delgado, Darrel Hughes, Kevin Lin, Colleen Barthol, University Health System, San Antonio, Texas.

BACKGROUND: Highly edematous states are common in critically ill patients in the intensive care unit (ICU). During acute resuscitation, fluid boluses of intravenous crystalloids, blood products, and colloids often exceed total daily fluid requirements. Fluid overload, often characterized by pulmonary and/or peripheral edema, is associated with more days on mechanical ventilation, increased rates of acute respiratory distress syndrome, increased ICU length of stay, and higher rates of mortality. This can be further exacerbated by hypoalbuminemia in the critically ill population. One of the most utilized therapies for diuresis is furosemide, a loop-diuretic that is highly protein bound. Determining the clinical significance of furosemide plus 25% albumin is imperative because albumin is associated with both higher costs and potential adverse effects.

OBJECTIVE: The objective of this study was to determine if there is a clinically significant difference between the combination of furosemide plus 25% albumin (F+A) compared to furosemide (F) alone for diuresis in critically ill hypoalbuminemic patients. The primary outcome is difference in rates of diuresis (mL/kg/h) between the two groups.

METHODS: This single center retrospective chart review identified patients at least 18 years of age admitted to the ICU with hypoalbuminemia, who received furosemide with or without 25% albumin between January 1, 2012 and August 31, 2016. Data were analyzed using STATA (College Station, Texas, 2015) to run Chi-square, Fisher’s Exact, and Wilcoxon Rank-Sum tests with statistical significance represented by p<0.05.

RESULTS: A total of 84 patients met inclusion criteria (F+A, n=43; F, n=41). Patients were predominately male (n=46, 55%) with a median age of 54 years (IQR 38-65). The groups were comparable at baseline except significantly more F+A patients were treated in the Neuro ICU. Median rates of diuresis after intervention were not significantly different in the F+A versus F groups ((1.41 vs. 1.49 mL/kg/h), p=0.77). On average, patients in the F+A group had more total days on mechanical ventilation (13 vs. 7 days, p=0.025). However, F+A patients were on the ventilator significantly more days prior to the initiation of
diuretic therapy (5 vs. 3 days, p=0.008) with a shorter median duration of diuretic therapy (3 vs. 8 days, p<0.001). No statistically significant differences were seen in regards to fluid status, hemodynamic instability, length of stay, or mortality.

CONCLUSION: Overall, there were no differences seen in rates of diuresis (mL/kg/h) between the two groups. Larger prospective clinical trials should be completed to evaluate whether a difference exists between diuresis with 25% albumin plus furosemide versus furosemide alone.

**CONCLUSIONS:**

1. Additional interventions are required for patients with underlying CKD or CHF.
2. Fluid resuscitation in patients with CHF was not associated with negative outcomes.
3. The Surviving Sepsis Campaign guidelines recommend fluid resuscitation in patients with CHF.

**PL IX-7**

**INTRAVENOUS CRYSTALLOID VOLUME IN PATIENTS WITH SEVERE SEPSIS/SEPTIC SHOCK: THE EFFECTS OF PRE-EXISTING CHRONIC KIDNEY DISEASE AND HEART FAILURE.** Sara Y. Huh, Andrew C. Faust, Texas Health Presbyterian Hospital of Dallas, Dallas, TX.

**PURPOSE:** The Surviving Sepsis Campaign guidelines currently recommend an initial fluid challenge of 30 mL/kg of i.v. crystalloid in all patients with severe sepsis; however, the downstream effects of excess fluid and positive fluid balance may be equally important in the management of septic patients. Patients with concomitant congestive heart failure and/or chronic kidney disease have a higher potential for iatrogenic fluid overload, which has been shown to be independently associated with hospital mortality. There is limited data exploring whether initial fluid resuscitation in these specific patient populations increases the propensity for fluid overload and subsequent outcomes associated with potential fluid overload. The purpose of this study is to assess outcomes associated with initial fluid resuscitation in severe sepsis/septic shock patients with a past history of CHF and CKD.

**METHODS:** A retrospective chart review was conducted on adult patients from January to November 2016 with documented severe sepsis who received at least 30 mL/kg i.v. crystalloid within the initial six hours of presentation. A control group (i.e. patients without a prior history of CKD or CHF) was compared with a study group (i.e. patients with a prior history of CKD or CHF). Outcomes of interest included use of vasopressors or inotropes, need for and duration of mechanical ventilation, use of i.v. diuretics, incidence of hypernatremia and/or hyperchloremia, hospital length of stay, and mortality.

**RESULTS:** A total of 153 patients were evaluated for study inclusion. Of those, 83 patients met inclusion criteria for the study (48 patients did not have baseline CHF/CKD versus 35 patients had baseline CHF and/or CKD). The total fluid administered at six hours was 3305 ± 1587 mL in the non-CHF/CKD group and 3388 ± 978 mL in the CHF/CKD group (difference: 83 mL; p=0.79, 95% CI -521 to 686). The outcomes of interest were as follows in the control group versus study group: median days of vasopressor use were 1 (IQR 0-2) vs. 2 (IQR 1-4) (p=0.005), median days of mechanical ventilation was 0.5 (IQR 0-3) vs. 2 (IQR 0-5.5) (p=0.01), mortality 23% versus 54% (p=0.005), and hospital length of stay 9.5 (IQR 4-18.8) versus 14 (IQR 7-18) (p=0.35).

**CONCLUSIONS:** Administration of guideline-recommended fluid resuscitation in patients with CHF and/or CKD was not associated with negative outcomes requiring additional interventions. Patients with underlying CKD or CHF had significantly higher overall mortality, highlighting the need for additional studies in this patient population.

**IXB – CRITICAL CARE**

**PL IX-8**

**CLINICAL OUTCOMES OF ANALGESIC-FIRST SEDATION VERSUS BENZODIAZEPINE-FIRST SEDATION IN MECHANICALLY VENTILATED PATIENTS.** Rosemary Amponsaa-Korang, Ran Xu, Hanh-Nhi Duong, Kayleigh Emerson, Elizabeth Lee, Ha Nguyen, CHI St Luke’s The Woodlands Hospital, The Woodlands, TX.

**PURPOSE:** The objective of this study was to evaluate and compare clinical outcomes in patients on mechanical ventilation (MV) managed by analgesic-first (AF) versus benzodiazepine-first (BF) sedation in an acute care community hospital.

**METHODS:** This was a retrospective cohort study. Data was collected using the institution’s electronic medical records on patients who were on MV and admitted to the hospital’s intensive care unit (ICU) from September 2015 to December 2016. Inclusion criteria were patients age > 18, on MV for at least 48 hours, and requiring continuous administration of analgesia and sedation. Exclusion criteria included pregnancy, induced hypothermia, and patients refusing life support. Primary outcome measured was the duration of mechanical ventilation. Secondary outcomes included hospital and ICU length of stay (LOS), pain and sedation scores.

**RESULTS:** A total of 203 patients were analyzed of which 59 met our inclusion criteria. Age, gender and weight were not statistically different between groups. The AF group had a total of 36 patients of which 19 were males (53%). The BF group had 23 patients with 11 males (48%). Average age of patients was 67.6 years in the AF group and 60 years in the BF group, (p = 0.06). Average weight of the patients in the AF group was 93.7 kg and 85.1 kg in the BF group (p = 0.23). Duration of MV was 2.3 days shorter in the AF group compared to that in the BF group, although the difference was not statistically significant (4.9 days vs. 7.2 days, p = 0.12). There were no significant differences regarding ICU length of stay (8.8 vs 8.4 days, p = 0.81) and hospital LOS (13.5 vs. 11 days, p = 0.40) between the AF and BF group. Cumulatively, patients in the AF group received a total of 8332.8 mcg of fentanyl during the first 4 days of MV compared to 774.8 mcg for those in the BF group. Midazolam dose over the first 4 days was 4.4 mg in AF group vs. 441.8 mg in the BF group. Average pain score was 1.7 for the patients in the AF group vs. 1.8 in the BF group. Average sedation score was -1.2 in the AF group vs. -1.5 in the BF group.

**CONCLUSION:** Overall, there was a trend towards shorter MV duration in the AF group although not statistically significant. Small sample size and retrospective study design were the limitations of the study. A larger study may be warranted to evaluate clinical outcomes.
PL IX-9
A RETROSPECTIVE COMPARISON OF THERAPEUTIC HYPOTHERMIA AND THERAPEUTIC EUTHERMIA AFTER CARDIAC ARREST. Esteban Montemayor, Sloka Manvi, Christina Chen, JPS Health Network, Fort Worth, TX.

INTRODUCTION: Targeted temperature management (TTM) is a therapeutic modality that helps preserve neurological function in patients who experienced a cardiac arrest with return of spontaneous circulation (ROSC). There exists a paucity of literature surrounding the effect of therapeutic euthermia [TE] (36°C) or hypothermia [TH] (32°C-34°C) protocols, specifically on the total dose of sedative, analgesic and paralytic use in the first 24 hours of cooling post ROSC. In addition, there is a lack of data regarding differences between sex and clinically relevant outcomes after cardiac arrest.

PURPOSE: To evaluate between-sex differences in overall usage of sedatives, analgesics and paralytics among patients treated with the TH and TE protocols following cardiac arrest and ROSC.

METHODS: This was an exploratory observational chart review of adult comatose survivors of cardiac arrest, who underwent TTM, and were separated into the TH or TE groups based on the temperature range they were prescribed for the first 24 hours of cooling after ROSC. Study outcomes included: total doses of sedatives and analgesics (lorazepam/propofol and morphine equivalents respectively) used, percentage of patients requiring continuous paralytics (cisatracurium) in the first 24 hours of cooling, and in-hospital mortality. Protocol-specific sex differences are presented as frequencies and percentages or median and interquartile range (IQR) for categorical and continuous variables respectively.

RESULTS: Of 118 patients, screened 64 met inclusion criteria and underwent the TTM protocol. Forty patients (62%) were allocated to the TH protocol vs. 24 (38%) to the TE protocol. The median total lorazepam dose was similar between males and females within the TH protocol (29 mg vs. 28 mg); however females who underwent the TE protocol utilized a lower dose (48 mg) compared to males (65 mg). The median total propofol dose was less in females in the TH protocol (1642 mg vs. 2087 mg), but higher in the TE protocol (762 mg vs. 560 mg) when compared to males. Median total morphine dose was slightly higher in females (248 mg) vs. males (213 mg) within the TH protocol. This was different from the TE protocol, which was similar between sexes (220 mg in females vs. 225 mg in males). Continuous paralytic use was lower in females compared to males in both the TH (33% vs. 55%) and TE protocols (40% vs. 53%). In-hospital mortality was higher in females (80%) vs. males (21%) within the TE protocol; however similar rates were seen amongst patients in the TH protocol (61% in females vs. 68% in males).

CONCLUSIONS: Overall, the results suggest that females appear to require more analgesics and less propofol use when undergoing the TH protocol. In the TE protocol however, females required less lorazepam and more propofol in the first 24 hours of cooling. In addition, there was a lower percentage of females who required continuous paralytics in both protocols. Of note, females may have higher in-hospital mortality when undergoing the TE protocol.

PL IX-10
INCIDENCE OF LIVER DYSFUNCTION IN REFRACTORY NON-CONVULSIVE STATUS EPILEPTICUS. Shelbie Ralph, Yana Bukovskaya, Katherine Jennings, Ngoc Vu, Ochsner Medical Center, New Orleans, Louisiana.

PURPOSE: Treatment of refractory status epilepticus (RSE) is often controversial due to lack of high quality clinical trials. At Ochsner Medical Center (OMC), intravenous (IV) anesthetics and high doses of antiepileptic drugs (AEDs) are the standard of care in first line treatment of RSE. The purpose of this study is to evaluate the incidence of liver dysfunction in patients who are treated for RSE with high dose combination regimens of AEDs, as well as compare outcomes in patients who develop liver dysfunction to those who do not.

METHODS: This was a retrospective, descriptive cohort study including patients greater than 18 years of age with the diagnosis of RSE at Ochsner Medical Center between January 2013 through July 2016. The primary outcome is the incidence of liver dysfunction. Secondary outcomes including mortality, ICU length of stay, hospital length of stay, and disposition will be compared between the two cohorts (liver dysfunction vs no liver dysfunction).

RESULTS: In progress

CONCLUSIONS: In progress

PL IX-11
FOUR-FACTOR PROTHROMBIN COMPLEX CONCENTRATE OUTCOME MEASURES IN PATIENTS RECEIVING WEIGHT-BASED DOSING VERSUS FIXED-DOSING IN A HOSPITAL SETTING WITH ESTABLISHED GUIDELINES FOR USE. John Jacob Cannedy, Julia Chiappe, INTEGRIS Baptist Medical Center, Oklahoma City, Oklahoma.

PURPOSE: Four-Factor prothrombin complex concentrate (4FPCC) is labeled for urgent reversal of acquired coagulation factor deficiency, induced by vitamin-K antagonists, and off-label for oral anti-Xa inhibitors. The health-system’s formulary committee instituted a fixed-dosing protocol for 4FPCC dosing adapted from recent literature. The purpose of this study was to evaluate the clinical effectiveness, safety, cost effectiveness, and degree of prescriber compliance with the newly established 4FPCC fixed-dosing protocol, within the affiliated health-system, by comparing patients and outcomes before and after its implementation.

METHODS: This study included adult patients within the affiliated health system who received only 4FPCC for urgent reversal of warfarin or an oral anti-Xa inhibitor before and after implementation of the fixed-dosing protocol.
protocol between June 1, 2013 to May 19, 2016 and May 20, 2016 to October 3, 2016 respectively. Data for population comparison included: patient demographics, agents and indications for chronic oral anticoagulation, presence of other prescription or inpatient medications affecting hemostasis, laboratory values and blood component use before and after 4FPCC administration. Additional data collected to derive the measures for evaluation of fixed-dosing protocol included: number of 4FPCC doses to reach international normalized ratio (INR) less than two for warfarin reversal, cumulative 4FPCC units administered, rates of thrombotic complications within seven days from 4FPCC administration, patient mortality, and patient discharge disposition.

**RESULTS:** Preliminary analysis of 52 patients indicated that 42 patients received weight-based dosing of 4FPCC compared to 10 patients in the fixed-dosing group. Warfarin reversal results indicated that the average dose of 4FPCC used in the weight-based dosing category was 30.4 units/kg and 23.5 units/kg in the fixed-dosing category. Results also indicated that the reduction in INR after the first dose of 4FPCC was on average 2.84 in the fixed-dosing group and 3.39 for the weight-based dosing group. The average time to first post-dose follow-up was 21 hours in the fixed-dosing group and 4.5 hours in the weight-based dosing group. Within the warfarin reversal population, fixed-dosing required no blood product administration after 4FPCC use. The results from the Factor Xa reversal population indicated that the average dose within the weight-based dosing group was 40 units/kg compared to 24 units/kg in the fixed-dosing group. The fixed-dosing group, on average, had less blood product administration compared to weight-based dosing. Fixed-dosing for both warfarin and Factor Xa reversal preliminarily showed longer lengths of stay compared to the weight-based dosing group. Thrombotic complications occurred in 4.8% of the weight-based dosing patients compared to no complications in the fixed-dosing population.

**CONCLUSIONS:** Based on the preliminary data, annual cost savings for the hospital could be greater than $50,000. There is also the opportunity for faster administration times, decreased waste, and appropriate follow-up with fixed-dosing.

**PL IX-12**

**IMPACT OF INITIATION OF DEEP VEIN THROMBOSIS PROPHYLAXIS IN PATIENTS WHO PRESENT WITH TRAUMATIC BRAIN INJURY.**

Caleb M. Carter, Lyndsay Sheperd, Andrew Faust, Texas Health Presbyterian Hospital, Dallas, TX.

**PURPOSE:** Patients who present with traumatic brain injury (TBI) are at an increased risk for developing venous thromboembolism. In the absence of deep vein thrombosis (DVT) prophylaxis, the incidence of thrombus formation can rise to 54% in patients with TBI. Mechanical prophylaxis alone has been shown to decrease the incidence of thrombotic events, but the addition of chemical prophylaxis has been shown to further reduce the risk. The purpose of this study is to evaluate the risk and benefits of chemical DVT prophylaxis in patients with TBI.

**METHODS:** In November 2014, our institution established a trauma service program. Using data retrospectively collected from that program and the electronic health record, we compared the incidence of thromboembolic events in patients who received chemical DVT prophylaxis versus those who did not (November 2014 to May 2015). Patients aged 18 years and older who suffered a TBI were included in this study. Exclusions to study participation were death or hospital discharge within 72 hours, active bleeding, therapeutic anticoagulation, progression of TBI, and brain injury as a result of asphyxiation. A total of 74 patients were reviewed and included in the study population with 37 patients in each study group.

**RESULTS:** To be reported

**CONCLUSION:** To be reported

**PL IX-13**

**APPLICATION OF THE 4T SCORE IN PATIENTS RECEIVING EXTRACORPOREAL MEMBRANE OXYGENATION (ECMO) WITH SUSPICION OF HEPARIN INDUCED THROMBOCYTOPENIA (HIT).**

Ellen K. Colman, Kathryn Cox, Shanna Stevens, Omar Hernandez, Gary Schwartz, Baylor University Medical Center, Dallas, TX.

**PURPOSE:** Anticoagulation is required for patients receiving extracorporeal membrane oxygenation (ECMO). Unfractionated heparin is the anticoagulant of choice with ECMO therapy. Thrombocytopenia may occur with heparin administration and/or ECMO. The 4T score is a strategy commonly used to predict probability of heparin induced thrombocytopenia (HIT). The 4T score has been reviewed in critically ill patients, but has never been looked at concomitantly in the ECMO population. The primary objective of this study is to determine the value of 4T scores in patients receiving ECMO, as it compares to 4T scoring in the critically ill.

**METHODS:** Data was retrospectively collected from the current institutional ECMO database. Dataset included all subjects receiving ECMO with suspicion of HIT. Suspicion of HIT was captured by the ordering of a HIT antibody test and/or serotonin release assay. 4T scores were calculated from this group of subjects and were then case-matched with a non-ECMO, critically ill group.

**RESULTS:** To be reported

**CONCLUSION:** To be reported

**IXC – CRITICAL CARE**

**PL IX-14**

**HEPARIN DOSING IN CRITICALLY ILL PATIENTS DURING THERAPEUTIC HYPOTHERMIA.**

Chelsea Krueger, Brian Gulbis, Jennifer Cortes, Memorial Hermann-Texas Medical Center, Houston, TX.

**PURPOSE:** To evaluate the effect of therapeutic hypothermia (TH) on heparin dosing protocol efficacy and PTT response in critically ill patients. Therapeutic hypothermia is associated with changes in drug pharmacokinetics which may lead to supratherapeutic
partial thromboplastin time (PTT) in patients receiving unfractionated heparin.

METHODS: This was a single-center, retrospective cohort study of all adult (≥18 years old) patients undergoing TH and admitted to a Memorial Hermann-Texas Medical Center intensive care unit between 7/1/2012 and 12/1/2016. Patients undergoing TH for cardiac arrest with at least two collected PTT levels were included. Study patients receiving therapeutic heparin were compared to a control cohort to evaluate differences in mean PTT during TH temperature stages. Secondary endpoints included minor and major bleeding, time in therapeutic range, and the association between PTT and heparin dose at each temperature stage of the TH protocol.

RESULTS: A total of 188 patients were included. Sixty-four patients from the control cohort (median APACHE II score 37, IQR 30-40; median age 62 years, IQR 49-71; 69% male) were compared to 124 patients from the treatment cohort (median APACHE II score 37, IQR 32-40; median age 62 years, IQR 53-69; 66% male). There was no significant difference in mortality (56% vs. 62%; p = NS), minor bleeding (14% vs. 19%; p = NS), or bleeding in a critical site (1.6% vs. 1.6%; p = NS). Analysis of the association between PTT and heparin dose during hypothermia is ongoing.

CONCLUSION: Receipt of heparin during TH was not associated with worse patient outcomes and an evaluation of heparin protocol efficacy during TH is ongoing.

PL IX-15
TOLERANCE OF ENTERAL NUTRITION AMONG PATIENTS RECEIVING PARALYTIC DRIPS. Kathleen Kusey, Brian Gulbis, Jennifer Gass, Brad Domonoske, Memorial Hermann-Texas Medical Center, Houston, TX.

PURPOSE: To investigate the percentage of patients receiving paralytic infusions for ≥24 hours and concurrent enteral nutrition that are able to meet at least 80 percent of their enteral nutrition goal, as determined by a clinical dietician.

METHODS: This was a single-center, retrospective, descriptive study that included patients ≥18 years of age that received paralytic infusions for ≥24 hours with vecuronium, rocuronium, or cisatracurium, while concurrently receiving enteral nutrition. Each patient’s maximum enteral nutrition rate during paralytic infusion was compared to the enteral nutrition goal determined by the consulted clinical dietician. Patients admitted to any adult intensive care unit from July 1, 2012 to September 16, 2016, who received a continuous paralytic infusion and concurrent enteral nutrition were eligible for inclusion. Patients were excluded if they required total parenteral nutrition at the time of paralysis. Data was retrospectively collected from the electronic medical record at Memorial Hermann-Texas Medical Center.

RESULTS: A total of 116 patients were included in interim data analysis. Of the 116 patients who received concurrent enteral nutrition, and a paralytic infusion during the study period, 52 (44.8%), met at least 80% of their enteral nutrition goal. The patients included met an average of 63.9% of their enteral nutrition goals, and the interquartile range was 32.7%-100% of goal nutrition.

CONCLUSION: Based on interim data from Memorial Hermann-Texas Medical Center, critically ill patients who received a continuous paralytic infusion agent were able to tolerate enteral nutrition. These results show there may be opportunity to increase the percentage of patients tolerating goal enteral nutrition through education to critical care practitioners.

PL IX-16
EVALUATION OF DISCONTINUATION OF STEROIDS IN RESOLVED SEPTIC SHOCK. Kaycie Jackson, Ala Eddin Sagar, Sara Schepcoff, Jennifer Cortes, Memorial Hermann-TMC, Houston, TX.

Background: Severe sepsis is estimated to occur in 300 out of 100,000 patients each year. Septic shock, the most dangerous form of severe sepsis, is determined to cause mortality in almost 50% of cases. The Surviving Sepsis Campaign recommends the administration of low dose hydrocortisone for continued adjunctive therapy in patients who have been properly resuscitated and are receiving vasopressor therapy. The CORTICUS and Annane landmark trials have shaped the way that steroids are used in the setting of septic shock. CORTICUS evaluated patients with evidence of infection followed by a systemic response to infection requiring fluid resuscitation and vasopressors. Hydrocortisone was administered adjunctively as a 50mg bolus intravenously every 6 hours for 5 days and then tapered to 50mg every 12 ours for 6-8 days, 50 mg every 24 hours for 9-11 days, and then discontinued. The Annane trial involved similar patients to the CORTICUS trial. They utilized hydrocortisone as adjunctive therapy and administered it at 50 mg bolus intravenously every 6 hours for 7 days. It remains unclear as to whether or not steroids must be tapered after resolution of shock. The purpose of this study is to compare the relapse vasopressor rates upon discontinuation of steroid therapy and if there are side effects to abrupt cessation.

Methods: This is a single center, retrospective, cohort study. Patients were included in the study if they had a diagnosis of septic shock and received adjunctive steroid therapy. Patients were excluded if they expired within 24 hours of ICU admission, had documented use of steroids in the last 4 weeks, chronic steroids use in the last 6 months, midodrine use, or steroids discontinued in last 24 hours of life.

Results: During the study time frame, 577 patients were identified and screened for possible inclusion of which 162 met inclusion and exclusion criteria. Baseline demographics showed that most patients were men, 59% in the taper group vs 54% in the abrupt group (p=NS), with an average age of 61 vs 65 and a SOFA score of 13 vs 12 (p=NS). All other baseline demographics were not significant except for CAD, 20% vs 37% (p=0.015). In regards to the primary outcome, 22% vs 19% relapsed, requiring additional vasopressor support. ICU mortality was 28% vs 40% (0.67 OR, 95% CI (0.315-1.171), p=NS). Hospital mortality was 41% vs 46%, (0.818 OR, 95% CI (0.439 – 1.524), p=NS).

Conclusions: Based on the results of this study, there is no benefit in abrupt discontinuation of steroids versus a steroid taper after resolution of septic shock. The specific discontinuation regimen did not impact ICU or hospital mortality.
PL IX-17
DOES THE SEPSIS CORE MEASURE IMPACT DISCORDANCE WITH LOCAL GUIDELINES FOR FIRST-DOSE ANTIBIOTIC PRESCRIBING IN PATIENTS WITH SEPSIS FROM CELLULITIS?
Elizabeth Lass, Manasa Murthy, Mitch Daley, Emily Hodge, Dusten Rose. Seton Healthcare Family, Austin, TX.

PURPOSE: In 2015, the Centers for Medicare and Medicaid Services (CMS) implemented the SEP-1 core measure, focusing on sepsis treatment and outcomes. This measure provides specific, broad-spectrum antimicrobial recommendations which may be inconsistent with clinical practice. Specifically, local guidelines recommend cefazolin or vancomycin as first-line therapy for cellulitis based on patient risk and local susceptibilities, yet both would be non-compliant as monotherapy for SEP-1. The purpose of this study is to determine if SEP-1 increases discordance with local guidelines for first-dose antibiotic prescribing in patients with sepsis from cellulitis.

METHODS: This multi-center, retrospective chart review includes patients aged 18-89 years old, admitted to the hospital between September 1, 2014 and September 1, 2016 with sepsis and severe sepsis secondary to cellulitis. SEP-1 was implemented on October 1, 2015, which will be used to categorize patients as either pre-SEP or post-SEP. Patients will be excluded based on requiring vasoconstrictor therapy, presence of multiple sources of infection, transfer from an outside hospital, history or risk of multi-drug-resistant organisms on admission, immunocompromised status, documented beta-lactam allergy, and/or confirmed pregnancy. The primary outcome is percent discordance with local guidelines for first-dose prescribing in patients with sepsis from cellulitis. Secondary outcomes will include empiric coverage for methicillin-resistant Staphylococcus aureus or Pseudomonas aeruginosa, switch from initial antibiotic(s) selected to maintenance antibiotic therapy, efficacy of antibiotic selection based on culture results and the incidence of Clostridium difficile infections. Nominal data will be evaluated via a Chi-square analysis or a Fisher’s exact test. A forward, stepwise logistic regression will be done to identify variables associated with guideline discordance.

RESULTS: To be presented.

CONCLUSION: To be presented.

PL IX-18
PRESCRIBING PATTERNS OF ANTIPSYCHOTICS AND ASSOCIATED OUTCOMES IN INTENSIVE CARE PATIENTS 65 YEARS AND OLDER.
Okikioluwa Arora, Kimberly Putney, Meghna Vallabh, Gregory Laine. CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: In 2005, the United States Food and Drug Administration issued a notice alerting healthcare professionals to the increased risk of death in elderly patients (age ≥ 65 years) with dementia-related psychosis treated with atypical antipsychotics. In 2008, the alert was updated to include conventional antipsychotics. Currently, there is a wide range of use of antipsychotics in practice; however, when initiated in the intensive care unit (ICU), they are typically used to treat patients with delirium, agitation or insomnia. The objective of this study is to assess the prescribing patterns of antipsychotics in elderly patients admitted to either a medical or neurology ICU at our institution and their outcomes.

METHODS: This was a single center, retrospective, chart review evaluating electronic health records to identify patients age ≥ 65 years admitted to the medical or neurology ICU at the study institution, from January 2015 through December 2015 who received an antipsychotic during their ICU stay. The antipsychotics evaluated in this study include aripiprazole, haloperidol, olanzapine, quetiapine, and ziprasidone. The primary endpoint is all-cause mortality. Secondary endpoints include ICU and in-hospital length of stay, rates of CAM-ICU documentation, continuation of antipsychotics after transfer of care or discharge, and change in QTc from baseline in patients who had pre- and post-antipsychotic exposure electrocardiogram (EKG).

RESULTS: A total of 100 patients were included in this study. In-hospital mortality occurred in 9% of the patients. The most commonly utilized antipsychotics were quetiapine (75%) and haloperidol (42%). Thirty-five percent of patients were administered two or more antipsychotics while hospitalized. The average ICU and in-hospital length of stay was 8.5 ± 9.1 days and 18.7 ± 14.6 days, respectively. Rates of continuation of antipsychotics from ICU to the floor were 52% and 30% upon discharge home. Of the patients discharged home on an antipsychotic, 56.7% (n=17/30) were not on an antipsychotic prior to admission. Documentation rates for CAM-ICU and RASS were 23% and 36%, respectively. In the subset of patients with pre- and post-exposure antipsychotic EKG (n = 27), 40.7% had a prolonged QTc after antipsychotic exposure.

CONCLUSION: In this study, we found that more than half of the patients discharged on an antipsychotic had no exposure prior to admission. Based on this, it is imperative for the medical team to perform adequate medication reconciliation and evaluate the patient upon discharge for the need to continue an antipsychotic, considering there is a black-box warning associated with the long-term use of these agents in elderly patients.

PL IX-19
IMPACT OF PROPOFOL ON HEMODYNAMIC CONTROL IN MECHANICALLY VENTILATED SEPTIC SHOCK PATIENTS.
Vi T Bui, Young R Lee. Hendrick Medical Center / Texas Tech University Health Sciences Center, Abilene, TX.

PURPOSE: Propofol has become one of the sedatives of choice in the critical care setting due to its rapid onset and offset, providing quick titration, daily sedation interruption, and less delirium effect. However, in septic shock patients, propofol-induced hypotension may complicate hemodynamic instability, necessitating dose increase or prolonged use of vasopressors. This study investigates the impact of propofol infusion on time to achievement of target blood pressure in mechanically ventilated patients with septic shock in comparison to other sedation agents.

METHODS: This is a retrospective, single-center, propensity-matched, cohort study conducted in septic shock patients on mechanical ventilation. Patients with septic shock were identified by International Classification of Diseases diagnosis codes recorded in their electronic medical record. The study included adult patients who were diagnosed with septic shock upon intubation, on
vascular pressors and a sedative concurrently. Patients were assigned to either the study group (propofol) or control group (other sedatives) based on their ICU sedation agent. The primary outcome is time to achieve target blood pressure, defined as mean arterial pressure of at least 65 mmHg or systolic blood pressure of at least 90 mmHg. Secondary outcomes include time to off vasopressor, duration of mechanical ventilation, length of stay, incidence of ICU delirium, and mortality. Data collection included demographic information, baseline characteristics, and treatment progression such as age, comorbidities, primary sepsis source, vitals, laboratory values, APACHE II and SOFA scores, Richmond agitation-sedation scale, medications and duration, as well as incidence of delirium and mortality. Statistical significance is defined as p-value less than 0.05.

RESULTS: Study is currently in progress.

CONCLUSION: Study is currently in progress.

XA – INFECTIOUS DISEASE/HIV

PL X-1
EFFECT OF STENOTROPHOMONAS MALTOPHILIA TREATMENT ON PULMONARY FUNCTION IN PEDIATRIC PATIENTS. Maren Cowley, Eslie Tebedge, Ana Nicho, Elizabeth Hand, University Health System, San Antonio, Texas.

PURPOSE: Stenotrophomonas maltophilia, a bacteria with broad, inherent antimicrobial resistance, commonly colonizes the respiratory tract of mechanically ventilated patients. Studies in adults have failed to show a difference in outcomes for patients treated or not treated for S. maltophilia, in the absence of radiologic evidence of pneumonia. Outcomes data in children, however, are lacking. The purpose of this study is to assess the change in pulmonary function of pediatric patients treated or not treated for a positive S. maltophilia culture to determine if treatment improves outcomes.

METHODS: A single-center, retrospective chart review of pediatric patients admitted to our institution between August 1, 2006 - August 1, 2016 was conducted. The primary objective was to assess pulmonary function improvement at the end of treatment, or at 7 days after the positive culture in patients not treated for S. maltophilia.

RESULTS: Seventy-two patients met inclusion criteria, 27 patients treated (T) and 45 patients not treated (NT). The mean age was 4.5 years. Infants less than one year old made up over half of the population. Baseline characteristics were similar except more untreated patients were in the neonatal intensive care unit (T 2.2% vs NT 2.2%; p=0.111). Characteristics were similar except more untreated patients were in the neonatal intensive care unit (T 2.2% vs NT 2.2%; p=0.111). Baseline demographics were similar except more untreated patients were in the neonatal intensive care unit (T 2.2% vs NT 2.2%; p=0.111). Further research is needed to determine when treatment of S. maltophilia in pediatric patients results in improved patient outcomes.

PL X-2
EFFECT OF ADJUNCTIVE CLINDAMYCIN DURATION ON TIME TO RESOLUTION OF COMPLICATED SKIN AND SOFT TISSUE INFECTIONS. Michael Tanner Moser, Kathryn Merkel, Theresa Jaso, Neil Pan. Seton Healthcare Family, Austin, TX.

PURPOSE: Clindamycin therapy is utilized in combination with other antibiotics in complicated skin and soft tissue infections (cSSTI) due to its potential to reduce bacterial toxin production. Current guideline recommendations include using adjunctive clindamycin in select infection types to suppress bacterial toxin production; however, the optimal duration of clindamycin has not been defined. This study will help determine if short-term or long-term adjunctive clindamycin affects time to resolution in cSSTI.

METHODS: This is a multi-center, retrospective, cohort study assessing the effect of clindamycin duration on time to objective resolution of cSSTI. The direct comparison will be between patients who receive ≥2 days of clindamycin and >2 days. The primary endpoint will be time to objective resolution, consisting of the complete normalization of SIRS criteria. Secondary endpoints will include length of stay, readmission within 30 days, and Clostridium difficile infection (CDI) rates within 60 days. The inclusion criteria are as follows: age ≥18 years, diagnosis of cSSTI (i.e., cellulitis, erysipelas, abscess, necrotizing fasciitis, and gas gangrene), ≥2 systemic inflammatory response syndrome (SIRS) criteria, and combination beta-lactam, vancomycin, or daptomycin therapy. Exclusion criteria include: pregnancy, immunosuppressed state, protein-synthesis inhibiting antibiotics besides clindamycin used during hospitalization, receipt of clindamycin for <24 hours, concomitant infection, and diagnosis of diabetic foot infection, osteomyelitis, septic arthritis, endocarditis, meningitis, epidural abscess, or device-related infections. Patient data collected will include the following: demographics, vitals and laboratory values, severity of illness, comorbidities, infectious etiology, surgical intervention, and antibiotics utilized. The primary endpoint will be analyzed using a Cox’s proportional hazards model. The secondary endpoints will be evaluated using Student’s t-test or Mann-Whitney U test as appropriate for continuous data, and χ² test for nominal data.
RESULTS: To be presented.

CONCLUSION: To be presented.

PL X-3

COMPARATIVE USE OF PIPERACILLIN/TAZOBACTAM VERSUS MEROPENEM IN PATIENTS WITH SEPSIS SECONDARY TO PNEUMONIA REQUIRING EMPIRIC BROAD-SPECTRUM COVERAGE. David Besanti, Minh Hong, Satish Mocherla, Medical Center Hospital, Odessa, TX.

Background/Objective: Resistance to broad-spectrum antibiotics, especially to carbapenems has become a growing public health concern. From the National Nosocomial Infection Surveillance (NNIS) study, identified 1825 isolates where 2.3% were non-susceptible Enterobacter isolates to imipenem-cilastatin, used for broad-spectrum coverage against extended-spectrum beta-lactamase [ESBL] pathogens. For piperacillin-tazobactam, an anti-pseudomonal penicillin, resistance is not as robust compared to the carbapenem class. In a study conducted by Zhang et al. identified ≥ 50% non-susceptible strains of E. coli and klebsiella spp. to ceftriaxone, but were still susceptible to piperacillin-tazobactam. The purpose for this retrospective study was to identify patients who were deemed inappropriate to receive meropenem, based on a list of appropriate-use criteria created by the infectious disease physicians and myself. The study was then designed to look at those patients who received meropenem versus patients that received piperacillin-tazobactam as empiric therapy in the setting of sepsis secondary to pneumonia.

Methods: This is a retrospective chart review focused on patients that were admitted for sepsis secondary to pneumonia. Patient charts were review from November 2010 – October 2016 and included patients that were at least ≥ 18 years, completed at least 3 days of antibiotics with piperacillin-tazobactam or meropenem, have ICD-9/10 codes for sepsis secondary to pneumonia (A41.9, R65.21, J18.9), radiographic evidence of chest infiltrate or opacity as reported by radiologist. Patients were excluded if they were deemed to meet at least one of the appropriate use criteria, did not have radiologic evidence of pneumonia, or did not receive at least 3 days of antibiotics.

Discussion: The comparative use of piperacillin-tazobactam versus meropenem is a retrospective study looking at the use of meropenem for empiric therapy in our institution. This was conducted, in response to 16 confirmed meropenem resistant pathogens from January 2016 – June 2016. Criteria were developed for a population where it would be reasonable to treat with a carbapenem and identify patients that could be appropriately treated with another broad-spectrum agent such as piperacillin-tazobactam.

Results: Results are still in progress.

Conclusion: At the conclusion of this study, we aim to restrict the use of meropenem solely to the patients that are deemed appropriate and justify the use of other broad-spectrum agents such as piperacillin-tazobactam to patients outside of the proposed criteria.


PL X-4

IMPACT OF A PROCALCITONIN-BASED ALGORITHM ON ANTIBIOTIC USE AT A COMMUNITY ACUTE CARE HOSPITAL. Tina Nguyen, Ran Xu, Hanh-Nhi Duong, Kayleigh Emerson, Elizabeth Lee, Ha Nguyen, CHI St Luke’s The Woodlands Hospital, The Woodlands, TX.

Purpose: To assess whether the guidance of PCT has an impact on the duration of antibiotic therapy in patients with suspected sepsis and/or bacterial infection.

Methods: This was an observational study at a community acute care hospital from September 1, 2016 to November 27, 2016. Per medical staff approved protocol, PCT was ordered by clinicians for patients with suspected sepsis and/or bacterial infection in the emergency department (ED), intensive care unit (ICU), and progressive care unit. Inclusion criteria were patients 18 years or older, non-pregnant, with suspected sepsis and/or bacterial infection. Exclusion criteria included patients who have received antibiotics 24 hours prior to admission, presentation of severe cardiogenic shock, paraneoplastic syndromes, or viral/malarial infection. The primary endpoint was the antibiotic days of therapy (DOT). The secondary endpoints were hospital and ICU length of stay (LOS) and antibiotic avoidance/de-escalation rate. Data of eligible patients were collected from Electronic Medical Records. Descriptive statistical analyses and appropriate statistical testing were applied to determine significance.

Results: A total of 197 patients with PCT levels were reviewed; 22 patients were excluded, and 175 patients were analyzed. The antibiotic DOT were 8.3 days in Group 1 (n = 49), 10.5 days in Group 2 (n = 59), 10.9 days in Group 3 (n = 31), and 13.5 days in Group 4 (n = 36). There was no statistically significant difference among the study arms except between Groups 1 and 4 (p = 0.01). Patients in Group 1 was associated with significantly shorter hospital LOS compared to Group 3 (4.9 vs. 7.5 days, p = 0.02) and compared with Group 4 (4.9 vs. 7.9 days, p < 0.005). Patients in Group 1 was also associated with significantly shorter ICU LOS compared to Group 3 (1.1 vs. 7.5 days, p < 0.005) and compared with Group 4 (1.1 vs. 4.8 days, p < 0.005). The rate of antibiotic avoidance was 7.4% (13 patients) and the rate of antibiotic de-escalation was 12.6% (22 patients) due to low or downtrend of PCT levels.
CONCLUSION: Initial PCT level less than 0.05 ng/mL was associated with shorter antibiotic DOT as well as decreased hospital and ICU LOS. The use of PCT-based algorithm guided antibiotic avoidance or de-escalation in 20% patients reviewed. Future studies may include historic control patients prior to the implementation of PCT-based algorithm.

PL X-5
EVALUATION OF THE TREATMENT OF ASYMPTOMATIC BACTERIURI A AT EAST JEFFERSON GENERAL HOSPITAL. Yasser M. Abdelaziz, Emily Taylor, Sara Al-Dahir, East Jefferson General Hospital, Metairie, LA.

PURPOSE: To examine the frequency of inappropriate antibiotic utilization in asymptomatic bacteriuria (ASB) at East Jefferson General Hospital based on the Infectious Diseases Society of America (IDSA) guidelines.

METHODS: A retrospective chart review was conducted on 495 patients from December 2015 to November 2016. Out of those patients, 286 (57.8%) met inclusion criteria. From the inclusion sample, 224 (78.32%) patients were diagnosed with urinary tract infection (UTI), 28 (9.79%) were diagnosed with ASB, and 32 (11.19%) did not have a diagnosis documented.

RESULTS: A sample size of 285 patients was needed for statistical significance. The primary endpoint was to evaluate appropriate treatment of ASB. Frequency of symptoms and signs were analyzed as well. The most common symptoms found were altered mental status, fatigue, and dysuria. The secondary endpoints were to identify the adverse effects and costs associated with inappropriate antibiotic utilization. Twenty-one percent of patients were found to be treated inappropriately leading to a total increase of $1,263.623 in antibiotic expenditure. Two patients experienced adverse events classified as level 1 and 2 adverse events. The documented two cases included diarrhea from ampicillin/subactam and erythema/burn from ceftriaxone.

CONCLUSION: The results of this study showed that almost one-fifth of UTI and one-third of ASB diagnosis were treated inappropriately. This led to an increase in antibiotic utilization and adverse effects for patients. Based on the results of this study, a new protocol will be implemented to ensure the appropriate treatment of ASB. Healthcare staff will also be educated in order to provide optimum therapy for future patients.

PL X-6
EVALUATION OF VANCOMYCIN DOSING POLICY AND ACHIEVING THERAPEUTIC LEVELS. Ellen R. Austin, Cheryl Bouthan, Sara Al-Dahir, East Jefferson General Hospital, Metairie, LA.

Purpose: To evaluate the effectiveness of the current pharmacokinetic policy of a local hospital at achieving therapeutic vancomycin levels.

Methods: A retrospective chart review of 249 patients, who received pharmacist dosed vancomycin, conducted in the period from November 1st, 2016 - January 2nd, 2017. Out of 249 patients, 74 fulfilled the following inclusion criteria: patient had to have received at least 3 doses of vancomycin and have had a trough drawn appropriately to determine if target trough concentrations were achieved. Patients were excluded if not dosed according to policy, younger than 18 years of age, received prophylactic doses, had documented chronic kidney disease stage 5 or were on hemodialysis. The primary endpoint was the percentage of patients reaching therapeutic level using dosing policy. The secondary endpoint was the percentage of patients experiencing an adverse drug reaction from vancomycin warranting discontinuation.

Results: Results currently pending.

Conclusion: Conclusion currently pending.

PL X-7
EMPIRIC MICAFUNGIN THERAPY AND RISK FACTORS FOR CANDIDEMIA. Amy Carr, Peter Colley, Mezgebe Berhe. Baylor University Medical Center, Dallas, TX.

PURPOSE: Multiple risk factors have been linked to invasive candidiasis; however, they are non-specific and often lead to empiric antifungals for a large number of patients. Identification of more precise risk factors could promote more judicious use of empiric micafungin. The objective of this study is to identify risk factors predicting candidemia in patients at Baylor University Medical Center in order to develop specific criteria to qualify patients for empiric micafungin therapy. Ultimately, this could decrease antifungal exposure, the development of resistant species, and associated costs.

METHODS: This is a retrospective, case control study of patients with positive blood cultures for Candida species and patients on empiric micafungin for greater than 3 days. This study includes patients admitted to Baylor University Medical Center from October 1, 2014, to October 25, 2016. Patients with blood cultures positive for both Candida and bacteria are excluded. Bone marrow transplant patients on prophylactic posaconazole are also excluded. The electronic medical record will be used to collect the following data: age, gender, diabetes mellitus, cirrhosis, hemodialysis, immunosuppressant use, uncontrolled HIV/AIDS, central venous catheter, hospitalization within 90 days, antibiotic use within 30 days, antifungal exposure within 30 days, candidemia (organism, susceptibilities), total parenteral nutrition, recent surgery, multifocal Candida colonization, gastrointestinal perforation, severe sepsis, 1,3-beta-D-glucan result, duration of hospitalization prior to positive culture, culture collection site, length of stay, ICU length of stay, and 30-day mortality. Candida score will be calculated. These two groups will be compared to identify which factors are the strongest predictors of candidemia. All data will be analyzed for normality of distribution. Statistical significance will be determined using the appropriate parametric tests or non-parametric analogs. This study has been approved by the Institutional Review Board.

Results: Research-in-progress

Conclusion: Research-in-progress
PL X-8
CLINICAL OUTCOMES OF HOSPITAL-ACQUIRED AND HEALTHCARE-ASSOCIATED PNEUMONIA WITH AND WITHOUT EMPIRIC VANCOMYCIN IN A NON-CRITICALLY ILL POPULATION. Wenxi Liu, Dusten Rose, Brady Helmink, Theresa Jaso, Kristin Monds, Seton Healthcare Family, Austin, TX.

PURPOSE: Hospital-acquired pneumonia (HAP) and healthcare-associated pneumonia (HCAP) are leading causes of hospital-acquired infections. Infectious Diseases Society of America (IDSA) guidelines recommend empiric anti-methicillin-resistant Staphylococcus aureus (MRSA) therapy for this patient population. However, recent evidence suggests that many HAP/HCAP patients are not at risk for MRSA, and initial therapy should be tailored to patient-specific factors. Currently, there are no studies comparing outcomes of empiric vancomycin use in this setting. The primary objective of this study is to evaluate clinical outcomes of non-critically ill HAP/HCAP patients who receive empiric vancomycin compared to those who do not.

METHODS: This study is a multi-center, retrospective cohort of non-critically ill adult patients diagnosed with HAP/HCAP. Retrospective chart review will be used to identify patients who presented with new onset pneumonia with one or more risk factors for HAP/HCAP and received intravenous antibiotics for greater than 72 hours. Treatment groups will be defined as patients who received empiric anti-MRSA therapy with vancomycin versus those who did not. The primary endpoint is clinical success at the time of antibiotic completion or discharge on antibiotics. Clinical success is defined as patients who did not experience death, did not require admission to the intensive care unit, and did not switch or require additional intravenous antibiotic(s) due to treatment failure. Secondary endpoints include hospital length of stay, time to clinical stability, in-hospital all-cause mortality, time to antibiotic de-escalation, and 30-day readmission rates for pneumonia. Safety will be examined through incidence of nephrotoxicity. Categorical variables will be analyzed using Chi-square or Fisher’s exact test, while continuous variables will be analyzed using Two-Sample t-test or Wilcoxon Rank-Sum based on variable distribution. Logistic regression will be used to determine predictors of clinical success.

RESULTS: Data collection is currently in progress

CONCLUSION: Final study results pending

PL X-9
IMPACT OF RAPID MOLECULAR NUCLEIC ACID TESTING ON DURATION OF EMPIRIC VANCOMYCIN THERAPY IN BACTEREMIA. Natalie Johnston, Terri Smith, Andrew Faust, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

PURPOSE: To evaluate the impact on vancomycin duration of therapy following implementation of a rapid molecular nucleic acid test in hospitalized patients with Gram-positive bacteremia.

METHODS: This is a retrospective analysis of patients on vancomycin for suspected Staphylococcus aureus bacteremia before and after the implementation of the Verigene® Gram-positive blood culture microarray. This rapid molecular test looked at whether an isolate was positive for the gene encoding for oxacillin resistance, called the mecA gene. Prior to the intervention, conventional diagnostic testing was used to identify staphylococcal isolates. After the intervention, all blood cultures positive for Staphylococcus spp. underwent rapid diagnostic testing, with pharmacists reviewing and recommending de-escalation when appropriate. The pre-mecA gene testing group patients were selected from September 1 to December 31, 2015 and post-mecA gene testing group patients were selected from September 1 to December 31, 2016. Patients were included if they were adults >18 years of age and initiated on vancomycin for presumptive Staphylococcus aureus bacteremia. Exclusions to study participation were treatment indications other than bacteremia, or DNR or comfort measures on arrival. The primary endpoint assessed was duration of vancomycin therapy, with secondary endpoints including number of vancomycin levels drawn, days to clinical cure, incidence of acute kidney injury during therapy, length of hospital stay, and mortality.

RESULTS: After screening 377 patients, 82 patients met inclusion criteria (46 in the pre-mecA testing group and 36 in the post-mecA testing group). Baseline characteristics were similar between the two groups. The majority of patients had coagulase negative staphylococci (78.2% in the pre-mecA group and 63.9% in the post-mecA group). Use of the mecA testing reduced the mean duration of vancomycin by 1.01 days (3.15 ± 1.15 vs. 2.14 ± 1.61; 95% CI, 0.41 – 1.62; p=0.001). There were no significant differences between the pre- and post-mecA groups regarding acute kidney injury (6.5% vs. 2.7%; p=0.63), days to clinical improvement (2.5[1;5] vs. 2[1;4.5]), hospital length of stay (10.5[6;16] vs. 8.5 [5;13.5]), or hospital mortality (6.5% vs. 2.7%; p = 0.63).

CONCLUSIONS: Based on this retrospective analysis, implementation of the Verigene® Gram-positive blood culture microarray for patients with suspected Staphylococcus aureus bacteremia reduced the duration of empiric vancomycin therapy without negatively impacting patient outcomes.

PL X-10
EVALUATING THE IMPACT OF RAPID MICROBIOLOGICAL DIAGNOSTICS ON THE MANAGEMENT OF BACTEREMIA DUE TO EXTENDED-SPECTRUM BETA-LACTAMASE (ESBL) PRODUCING ENTEROBACTERIACEAE. Michelle A. Kennedy, Gerard W. Gawryl, Methodist Hospital and Methodist Children’s Hospital, San Antonio, TX.

PURPOSE: Resistant gram negative pathogens are a continuous threat in the health care setting. Recent advances in rapid diagnostic technology have allowed for timely detection of such organisms. However, optimal utilization of such technologies remains challenging at many facilities. The objective of this study is to evaluate the impact of rapid diagnostic testing on early treatment of bacteremia due to ESBL-producing Enterobacteriaceae.

METHODS: The protocol for this study was approved by the Institutional Review Board and consists of a multicenter, retrospective chart review conducted at three hospitals in Texas. This is a retrospective evaluation of patients who had ESBL-positive bacteremia of an Acinetobacter baumannii (A. baumannii), Klebsiella pneumoniae (K. pneumoniae), or Citrobacter freundii (C. freundii) strain on blood culture. Included in the analysis were patients ≥ 18 years of age who were diagnosed with bloodstream infection (BSI) who were treated with an extended spectrum beta-lactam antibiotic (ESBL). Inclusion criteria were patients ≥ 18 years of age with an ESBL-producing strain isolated from blood culture. Exclusion criteria included patients with BSI due to non-ESBL-producing organisms. The primary outcome was time to BSI diagnosis and treatment. The secondary outcome was length of hospitalization.

RESULTS: A total of 100 patients were included in the analysis. The median time to BSI diagnosis was 1 day (IQR 0.5-2) and the median time to treatment was 1 day (IQR 0.5-2). The median length of hospitalization was 7 days (IQR 4-12). There were no significant differences in the median time to BSI diagnosis and treatment between patients with BSI due to ESBL-producing strains and patients with BSI due to non-ESBL-producing strains. There were also no significant differences in the median length of hospitalization between the two groups.

CONCLUSIONS: The implementation of rapid diagnostic testing for ESBL-producing strains of Enterobacteriaceae did not result in a decrease in the time to BSI diagnosis and treatment or a decrease in the length of hospitalization. Further studies are needed to evaluate the impact of rapid diagnostic testing on the management of ESBL-producing bloodstream infections.
community hospitals. An evaluation of patients admitted over a 33-month period will be completed to evaluate the antimicrobial management of ESBL-producing Enterobacteriaceae. Inclusion criteria for review will be as follows: patients admitted for at least 24 hours who produced an Enterobacteriaceae isolate from blood that was resistant to a third-generation cephalosporin. Additionally, the following parameters will be collected: resistance patterns of isolates, presence of an infectious diseases consultation, empiric versus targeted therapy, time to optimal therapy, timing of PCR result publication, provider specialty, microbiological clearance, and time to resolution of infection symptoms.

**RESULTS:** Retrospective data revealed over two hundred patients meeting inclusion criteria from February 2014 to December 2016 and is currently being gathered and analyzed. Analysis will be completed by March 2017.

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

**PL X-11**  
**RATES OF CLOSTRIDIUM DIFFICILE INFECTIONS ASSOCIATED WITH THE FREQUENCY-ADJUSTED USE OF ANTIBIOTIC AGENTS IN AN ACADEMIC VETERANS AFFAIRS MEDICAL CENTER.**  
Anne J. Gonzales-Luna, Andrew Hunter, Richard Cadle, Daniel Musher, Michael E. DeBakey Veterans Affairs Medical Center, Houston, Texas.

**Purpose:** Although use of any antibiotic agent has been established as a major risk factor for Clostridium difficile infections (CDI), there has been ongoing debate about which specific agents are most commonly implicated. Various studies have demonstrated an increase in CDI resulting from use of 3rd generation cephalosporins, clindamycin, and fluoroquinolones, but few have adjusted for the frequency with which these antibiotics are used in the patient population under study. Both the increasing use of antibiotics in the U.S. and the increasing incidence of hospital and community-acquired CDI indicate a need for further elucidation into factors predisposing to CDI.

**Methods:** A retrospective study will be conducted on data from July 2011-June 2016. Patients with a positive C. difficile fecal PCR assay who have previously received >2 days of treatment with clindamycin, a fluoroquinolone, or a third-generation cephalosporin will be identified with the institution’s antibiotic surveillance software. Patients included in the study must have received treatment with clindamycin, a fluoroquinolone, or a third-generation cephalosporin as monotherapy or in pre-specified combination therapy in the 30 days preceding the positive assay. Patients will be excluded if they received any antibiotic agent in addition to the pre-specified antibiotic combinations, or if they have had a positive fecal PCR assay for C. difficile in the preceding 12 weeks. The institution’s pharmacy information technology software will be used to gather the number of prescriptions dispensed for all antibiotic agents over the same time period. Odds ratios will be calculated and analyzed for inpatients and outpatients receiving clindamycin, a fluoroquinolone, or a third-generation cephalosporin. Other data collected for secondary outcomes will include use of a proton-pump inhibitor or histamine 2-receptor antagonist at time of positive C. difficile fecal PCR and age.

**Results:** Pending at the time of this submission.

**Conclusions:** Pending at the time of this submission.

**PL X-12**  
**EVALUATION OF URINARY TRACT INFECTION (UTI) MANAGEMENT IN A COMMUNITY HOSPITAL WITH SUBSEQUENT PATHWAY DEVELOPMENT AND IMPLEMENTATION.**  
Lauren May, Fran Esfahani, Brian Hughes, Norman Regional Health System, Norman, OK.

**PURPOSE:** To evaluate current UTI-related practices, focusing on appropriate ordering, assessment, and treatment of urine cultures, with subsequent development and implementation of a UTI diagnosis and treatment pathway to decrease inappropriate urine culture ordering and streamline appropriate antibiotic treatment of true infection.

**METHODS:** Phase one included an Investigational Review Board-approved randomized retrospective chart review of patients identified from a urine culture surveillance report dating from January to June 2016. Patients were excluded if pregnant, less than 18 years of age, or if there was insufficient information in the medical chart to evaluate appropriateness of therapy. Phase two includes development and implementation of a UTI diagnosis and treatment pathway. Subsequent data collection (phase 3) is to occur in late Spring 2017 in the same manner as phase one to determine improvement in appropriate urinalysis and antibiotic ordering after pathway implementation.

**RESULTS:** Phase one analysis of 150 patients was performed. Of the patients identified, 16 met exclusion criteria. The location of urine sample collection was in the emergency department in 93 out of 134 patients. In 58% of patients, urine samples were collected for appropriate reasons (i.e. presence of any of the following: altered mental status, sepsis, urinary symptoms, signs of infection, or fall in elderly patients). Urine sample collection was deemed inappropriate in the remaining 42% of patients based on the absence of documented urinary symptoms with primary complaints of neurologic/psychologic, respiratory, cardiac, or abdominal symptoms or admission to inpatient rehabilitation unit. Urine cultures resulted with significant colony counts, no growth, contamination, or insignificant colony counts in 34%, 34%, 25%, and 7%, respectively. Appropriate treatment, whether that be giving or withholding antibiotic therapy, occurred in 91% of patients analyzed. Of the 21 patients identified as having asymptomatic bacteriuria, 38% were inappropriately treated with antibiotics. **CONCLUSION:** Analysis of phase one data suggests a significant number of urine samples gathered in the emergency department and on admission to inpatient rehabilitation unit are in patients without urinary symptoms documented; however, antibiotic selection for empiric treatment in those patients with suspected urinary tract infection was generally appropriate and consistent. Pathway development and removal of a default “urinalysis with reflex culture” order from many of the standard order sets may help to improve appropriate evaluation and
subsequent treatment of urinary tract infections even further.

PL X-13

CLINICAL IMPACT OF DAPTOMYCIN TREATMENT FOR ENTEROCOCCAL BACTEREMIAS WITH ELEVATED MICS WITHIN SUSCEPTIBLE RANGE. Sara Lott, Cynthia Nguyen, Julius Li, Ochsner Medical Center, New Orleans, Louisiana.

Purpose: The Clinical Laboratory and Standards Institute (CLSI) defines daptomycin susceptibility in enterococci as having a minimum inhibitory concentration (MIC) ≤ 4 µg/ml. However, mutations in the cell envelope have been observed among enterococci with an MIC of 3-4 µg/ml, and case reports have linked these MICs with treatment failure and the development of resistance. We sought to elucidate potential differences in clinical outcomes in patients receiving daptomycin therapy for enterococcal bacteremia with a daptomycin MIC ≤2 µg/ml and MIC >2 and ≤ 4 µg/ml.

Methods: This is a single-center, retrospective cohort study of patients on daptomycin therapy for enterococcal bacteremia comparing isolates with MIC ≤ 2 µg/ml versus MIC >2 and ≤ 4 µg/ml from June 2012 to December 2016. Patients greater than 18 years old were included if they had at least one positive blood culture for Enterococcus faecalis or faecium, received a minimum of 72h of daptomycin therapy, and had at least one available follow-up culture available. Patients were excluded for polymicrobial bacteremia, a daptomycin MIC >4 µg/ml, a suspected pneumonia or CSF source of infection, death within 48h of positive blood culture, or concomitant use of an active enterococcal agent. The primary outcome was treatment failure, defined as a composite of clinical and microbiologic failure. Clinical failure was defined as the discontinuation of daptomycin therapy due to clinical deterioration as determined by the treating physician. Microbiologic failure was defined as persistent bacteremia for >4 days on daptomycin therapy. Secondary outcomes included 30-day all-cause mortality, relapse, and emergence of daptomycin resistance.

Results: In progress.

Conclusions: In progress.

XC – INFECTIOUS DISEASE/HIV

PL X-14

RETROSPECTIVE EVALUATION OF APPROPRIATE PRESCRIBING BEHAVIORS FOR THE TREATMENT OF UTI IN A PRIMARY CARE SETTING. Courtney Duval, Meredith Sigler, Kevin Kelly and Mehwish Mahmood, VA North Texas Health Care System and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, Texas.

Purpose: Inappropriate use of antibiotics in the treatment of urinary tract infections (UTIs) in an outpatient setting is common despite the availability of evidence-based guidelines and primary literature. Very few studies exist which evaluate appropriate prescribing behaviors in the US which look at UTIs in the primary care setting. The extent of inappropriate outpatient antibiotic prescribing for UTIs is not fully known. The primary objective of this study is to evaluate the appropriateness of drug selection in outpatient antibiotic prescriptions for UTIs at the VA North Texas Health Care System. Secondary objectives are to determine how many patients were treated for asymptomatic bacteriuria, to evaluate the measure of resistance based on empiric antibiotic prescribing and to evaluate adverse drug effects associated with antibiotic prescribing.

Methods: A retrospective observational cohort study conducted at the Veterans Affairs North Texas Healthcare System (VANTHCS) evaluating veterans prescribed antibiotics for UTIs in a primary care outpatient clinic. Age, gender, race, allergies, weight, comorbidities, renal function, prior UTI history with previously used antibiotics for UTI will be recorded for each patient. Other data to be collected to assess primary and secondary objectives will be additional labs (urine analysis, urine cultures) and antibiotics prescribed for UTI (including the date of prescription, antibiotic name, dose and duration), symptoms documented by provider that are categorized by specific UTI symptoms and non-specific UTI symptoms.

Results: Data collection currently in progress

CONCLUSION: Research in progress

PL X-15

EVALUATION OF THE IMPACT OF BETA-LACTAM ALLERGY ON THE MANAGEMENT OF GRAM-NEGATIVE FLUOROQUINOLONE-RESISTANT BACTEREMIA IN THE COMMUNITY HOSPITAL SETTING. Sarah McDaniel, Gerard Gawrys, Methodist Hospital and Methodist Children’s Hospital, San Antonio, TX.

Purpose: Fluoroquinolone resistance has significantly impacted the management of gram-negative infections for decades. In certain parts of the United States, resistance rates approach 40 percent. It is imperative that clinicians appreciate this epidemiologic reality when selecting empiric therapy. However, in the setting of beta-lactam allergy, many physicians are compelled to use non-beta-lactam alternatives, particularly fluoroquinolones. Beta-lactam allergy and subsequent use of a fluoroquinolone may lead to inappropriate empiric coverage. The purpose of this study is to evaluate the impact of beta-lactam allergy on the management of gram-negative bacteremia caused by resistant gram-negative pathogens.

Methods: The protocol for this study was approved by the Institutional Review Board (IRB) and consists of a multicenter, retrospective chart review completed at several community hospitals in the Methodist Healthcare System. A review of patients admitted over a 33 month period will be conducted to evaluate the management of fluoroquinolone-resistant gram-negative bacteremia in two patient populations: those with a documented beta-lactam allergy and those without. Inclusion criteria will be adult and pediatric patients admitted for at least 24 hours who produced a gram-negative isolate from blood that was resistant to levofloxacin. Patients meeting these inclusion criteria will be divided into two groups: those with and without a beta-lactam allergy. Each group will be further divided into those that received a beta-lactam antibiotic and those that did not. The following parameters will be
collected for all patients: bacteremia source, patient age, unit, presence of infectious disease consultation, type and severity of beta-lactam allergy, previous safe administration of a beta-lactam, antibiotic utilized for treatment, adequacy of empiric coverage and resolution of clinical symptoms.

RESULTS: Data collection from February 2014 to December 2016 revealed several hundred patients with gram-negative, fluoroquinolone-resistant bacteremia. Within this group, one-hundred were identified to also have a beta-lactam allergy. Of those without a beta-lactam allergy, one-hundred patients were selected to serve as a comparator to the allergy group.

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

PL X-16
CLINICAL OUTCOMES OF ACUTE OSTEOMYELITIS IN SPINAL CORD INJURY PATIENTS AT A VETERAN’S AFFAIRS TEACHING HOSPITAL. Cristian J. Mendez-Sepulveda, Feibi Chi, Regina A. Issac, Richard M. Cadle, Rabih O. Darouiche, Michael E. DeBakey Veterans Affairs Medical Center.

PURPOSE: A common complication of an ineffectively treated pressure ulcer in SCI patients is contiguous osteomyelitis. However, studies providing information about the etiology of osteomyelitis as well as effectiveness of the current standard of care in this patient population are very limited. The purpose of this study is to evaluate the clinical outcomes and etiologic characteristics of spinal cord injury (SCI) patients in the treatment of osteomyelitis at the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC).

METHODS: A single center retrospective chart review using TheraDoc® and Computerized Patient Record System (CPRS) was conducted. Patients who were at least 18 years of age and diagnosed with acute pelvic and/or vertebral osteomyelitis with a positive bone culture were included in the study. The primary objective was clinical cure of acute osteomyelitis in SCI patients at the end of 6 weeks of treatment or at the earliest visit after the completion of treatment. Secondary objectives included comparing clinical cure of osteomyelitis caused by gram positive bacteria, gram negative bacteria and combination of both, appropriateness of antimicrobial dosing based on the minimum inhibitory concentration and reinfection rates at 6 months post-treatment or next earliest visit. Simple descriptive statistics, Chi-square test or Fisher's exact test will be used for data analysis as appropriate.

RESULTS: An interim analysis of 32 patients was performed. The mean age of the SCI population (n=22) was 57.1 (±14.1) years with the majority diagnosed with acute osteomyelitis of the ischium (82%). At the end of 6 weeks of treatment, the rate of clinical cure in SCI patients was 91%. There was a higher percentage of clinical cure of acute care medicine (ACM) patients (60%) when used as a comparator group. At 6 months, clinical cure rates for SCI and ACM patients decreased to 70% and 50%, respectively. There was a higher percentage of patients in the ACM cohort that were switched to oral antibiotics to complete the treatment (60.0% vs 9.1%) and had osteomyelitis caused by a gram positive bacteria (90.0% vs 77.3%). However, more patients in the SCI had polymicrobial infections (68.2% vs 60.0%) and more infections were caused by had multi-drug resistant organisms (63.6% vs 30.0%).

CONCLUSIONS: Pending completion of data collection and analysis.

PL X-17
EVALUATING THE IMPACT OF PROCALCITONIN ON ANTIBIOTIC UTILIZATION IN COPD EXACERBATIONS. Casey Dempsey, Shivani Patel, Ngan Vo, Chase Waxler, Memorial Hermann Southwest Hospital, Houston, TX.

PURPOSE: Antibiotic prescription rates for treating acute exacerbations of chronic obstructive pulmonary disease (COPD) have been reported as high as 85% in the United States. Research has shown that over 50% of COPD exacerbations are due to viral etiologies. Elevations in procalcitonin levels can be seen in bacterial infections and can help guide the need for antimicrobial therapy in this patient population. The goal of this study is to evaluate the impact of procalcitonin on antibiotic utilization in patients with COPD exacerbations.

METHODS: This is a retrospective study evaluating the impact of procalcitonin on antibiotic utilization in COPD exacerbations. Patients with a primary diagnosis of COPD exacerbation, at least 18 years of age, who had a procalcitonin level drawn within 24 hours of admission will be included. Exclusion criteria include patients presenting with severe trauma, sepsis, bacterial pneumonia, patients who require invasive mechanical ventilation, and patients with an initial admission to the ICU. Data collection variables include baseline characteristics, laboratory values, vital signs, microbiology cultures and sensitivities, antibiotic use data, and the final diagnosis. A prospective review of COPD exacerbation patients will be completed to determine the impact of procalcitonin on antibiotic utilization. The primary outcome of this study is antimicrobial duration of therapy. Secondary outcomes include hospital length of stay, 30-day readmission rates, and treatment failure defined as ICU admission, requirement of invasive mechanical ventilation, or death.

RESULTS: Research in progress

CONCLUSION: Research in progress

PL X-18
COMPARISON OF PATIENT RISK FACTORS FOR METHICILLIN-RESISTANT STAPHYLOCOCCUS AUERUS (MRSA) VS. MRSA PCR SCREENING IN CARDIAC AND ORTHOPEDIC SURGERY PATIENTS. Andrew Mulder, Shivani Patel, Samuel Akinyele, Johanna Higgins, Courtney Amor, Edward Septimus, Memorial Hermann Southwest Hospital, Houston, TX.

BACKGROUND: Methicillin-resistant staphylococcus aureus (MRSA) is a significant cause of health care-associated infections in cardiac and orthopedic surgery patients. Current guidelines recommend assessing multiple MRSA risk factors in addition to the MRSA colonization status, via MRSA polymerase chain reaction (PCR), to determine the need for the addition of vancomycin to standard surgical prophylaxis. Studies have yet to determine how MRSA PCR results correlate to established risk factors for MRSA surgical site infections.
PURPOSE: To determine the degree of correlation between risk factor-based screening and MRSA PCR based screening in cardiac and orthopedic surgery patients.

METHODS: This is a retrospective cohort study conducted at a 568 bed community teaching hospital. The study compares the MRSA risk factors found in patients who had a positive MRSA PCR result versus patients that had a negative MRSA PCR result. Eligible patients were 18 years or older who underwent cardiac or orthopedic surgery and were screened for MRSA colonization via MRSA PCR testing. All included patient charts will be reviewed for baseline characteristics and the MRSA risk factors of diabetes mellitus, hemodialysis (ESRD), hospitalization within the previous 90 days, prolonged hospitalization greater than seven days, history of MRSA infection, antimicrobial use within the previous 90 days, and MRSA colonization status defined as a positive MRSA PCR test. The primary endpoint of this study is the correlation between MRSA risk factors and the MRSA PCR result. The secondary endpoint is the correlation between MRSA risk factors, MRSA PCR result and the incidence of surgical site infections.

RESULTS: Research in progress

CONCLUSION: Research in progress

PL X-19
TREATMENT PATTERNS AND OUTCOMES IN ADULT PATIENTS WITH CANDIDA PARAPSILOSI CANDIDEMIA AT A LARGE ACADEMIC MEDICAL CENTER: A RETROSPECTIVE COHORT STUDY. Kim Ngo; Gary Fong; Hannah Russo; Nicholas Beyda. CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX. University of Houston College of Pharmacy, Houston, TX.

PURPOSE: Candida parapsilosis has emerged as an important fungal pathogen with mortality rate approaching 30%. To date, the optimal treatment of C. parapsilosis remains unclear. Furthermore, treatment patterns for C. parapsilosis and the utility of antifungal susceptibility testing in decision making are not well described. The purpose of this study was to assess antifungal susceptibility rates, treatment patterns, and outcomes among patients with C. parapsilosis candidemia.

METHODS: This was a single-center, retrospective review of adult patients hospitalized at CHI St. Luke’s Health–Baylor St. Luke’s Medical Center, between 2006 and 2016, who had a positive blood culture for C. parapsilosis. Demographic, microbiological, laboratory, and antifungal treatment data were collected.

RESULTS: Eighty patients with C. parapsilosis candidemia were identified of which 48 met inclusion criteria. Resistance to amphotericin B and caspofungin was uncommon (≤2%). However, fluconazole non-susceptible infections occurred in 19% of patients. The most common empiric treatment choice was an echinocandin (69%), followed by fluconazole (19%), and combination therapy (12%). De-escalation to fluconazole was possible in 83% of patients who received empiric echinocandin treatment, however, 55% continued echinocandins as definitive therapy. Most patients (89%) who were empirically treated with fluconazole remained on it as definitive therapy. There was no difference in mortality rate among patients who received initial treatment with an echinocandin compared to fluconazole (12% vs. 22%, p = 0.5928).

CONCLUSION: At our institution, the preferred antifungal choice as empiric therapy for patients with candidemia is an echinocandin. We found this appropriate even for patients with C. parapsilosis candidemia, as the rate of fluconazole non-susceptibility was high and choice of initial antifungal therapy had no impact on overall mortality. The rate of de-escalation to fluconazole was low even when susceptibility data was available, demonstrating an opportunity for antifungal stewardship in this patient population.

XIA – INFECTIOUS DISEASE/HIV

PL XI-1

PURPOSE: To outline the initiation and operation of a pharmacist-run penicillin allergy skin testing (PAST) program and to assess the outcomes as they affect inpatient antibiotic stewardship in terms of an increase in penicillin-type antibiotic utilization.

METHODS: PAST was performed using an institutionally sanctioned protocol encompassing a skin puncture test followed by an intradermal test if indicated, which utilized standard reagents: benzylpenicillin, polysine (major determinant), dilute penicillin G (minor determinant), histamine (positive control), and saline (negative control). Data were collected retrospectively on patients tested between November 2016 and February 2017 using a pre-determined data collection file. Exclusion criteria for testing included age <18, pregnancy, history of anaphylaxis to penicillins, history of reaction other than Type I hypersensitivity, immunosuppression, septic shock, use of histamine antagonists within 24 hours, and patient refusal. Data included basic demographics, infection being treated with culture results, initial antibiotics, histamine antagonists and steroids on profile, PAST results, PAST adverse effects, and antibiotics utilized after PAST while inpatient and upon discharge. Data were summarized using descriptive statistics, including frequencies and percentages.

RESULTS: An interim analysis of 23 patients was performed. All but one patient (96%) had a negative penicillin allergy skin test. In patients with negative PAST results, antibiotics were changed to a penicillin-type antibiotic or cephalosporin in 9 patients (41%) while inpatient. Of the patients with negative PAST results in whom antibiotics were changed while inpatient, 6 patients (55%) continued a penicillin-type antibiotic or cephalosporin outpatient. Of the patients with negative PAST results in whom antibiotics were not changed while inpatient, 4 (33%) received a penicillin or cephalosporin in the outpatient setting. In select patients, a negative PAST test resulted without inpatient changes, though it is unknown if penicillin-type antibiotics had been initiated at a separate LTAC or SNU facility. Adverse effects of PAST were limited to test site itching in 6 patients (26%), where only one patient required administration of diphenhydramine 1% cream. No adverse effects were
reported for patients in whom penicillin-type antibiotics were subsequently utilized while inpatient. One patient received a single dose of oral diphenhydramine after receipt of a penicillin-type antibiotic (ampicillin/subbactam) following a negative test, though its administration was not thought to be related to an immediate IgE-mediated reaction to a penicillin.

CONCLUSION: Based on interim data, penicillin allergy skin testing by the pharmacist can offer an increasingly beneficial role in antibiotic stewardship.

PL XI-2
RETROSPECTIVE EVALUATION FOR CULTURE CORRELATION USING A MICROARRAY-BASED, MULTIPLEXED RAPID DIAGNOSTIC INSTRUMENT (VERIGENE® SYSTEM) FOR BLOOD STREAM INFECTIONS. Van Ngo, Troy Stillings, Patricia Newcomb, Jooyeon Chae, Texas Health Harris Methodist Fort Worth, Fort Worth, Texas.

PURPOSE: Early de-escalation of antimicrobial therapy with the use of rapid diagnostic testing has been shown to improve patient outcomes, decrease length-of-stay, decrease costs, and ultimately lead to the decreased development of resistant pathogens. Despite this knowledge, it is still not used at our health-care system as the absolute identifier for de-escalation of therapy at this point because of the uncertainty of its ability to catch polymicrobial infections or other infectious sources. The purpose of this retrospective study is to assess the accuracy of the Verigene® system to routine microbiology methods in identifying the true offending pathogen in patients with bacteremia at multiple community based hospitals.

METHODS: This study was approved by the Institutional Review Board on November 11, 2016. This is a retrospective observational study via electronic chart review on patients who have been identified with positive blood cultures via traditional culture methods and underwent rapid pathogen identification with the Verigene® system from January 1, 2015 to August 31, 2015. Information was collected from 4 different community hospitals within the same health-care system. Patients were included if they were >18 years of age and had a positive blood culture. Data collection includes pathogen identity, resistance markers, microbiology data from other sources, and presence of central venous access.

RESULTS: A total of 607 isolates were retrospectively analyzed from 4 different community hospitals. We identified 172 gram-negative isolates and 435 gram-positive isolates, 38 (6.3%) of which were identified as “non-detectable” due to the limitations of the Verigene® species panel. Of the identifiable gram-positive isolates, 90% were identified correctly by Verigene® BC-GP with Staphylococcus epidermidis being the most common pathogen. Of the gram-negative isolates, 93.9% were identified correctly by Verigene® BC-GN with Escherichia coli as the most common pathogen. In the setting of polymicrobial infections (n=11), the system was able to identify both pathogens correctly 63.6% of the time. Sensitivities and specificities of individual organisms are currently being analyzed.

CONCLUSION: The Verigene® system has provided acceptable accuracy in identification of bacteria in a monomicrobial setting at these institutions. However, if the preliminary gram-stain identifies two or more pathogens, the results of the Verigene® system should be critically analyzed and decisions on escalation or de-escalation of antibiotics should be based on clinical judgement.

PL XI-3
CLINICAL IMPACT ON EMPIRIC CARBAPENEM USE IN THE EMERGENCY DEPARTMENT AND INTENSIVE CARE UNITS AFTER IMPLEMENTATION OF ANTIMICROBIAL STEWARDSHIP AND A CLINICAL DECISION SUPPORT TOOL. Brent M. Ottarski, Sunaina Rao, Shelley Simon, Theresa Yarger, Baylor All Saints Medical Center, Fort Worth, TX.

PURPOSE: Increasing concern for resistance to carbapenems, particularly with carbapenem-resistant Enterobacteriaceae, drives the need to reevaluate carbapenem use. Effective January 1, 2017, The Joint Commission’s new Medication Management standard 09.01.01 requires antimicrobial stewardship in hospitals and it is expected that the Centers for Medicare and Medicaid Services will soon require the same as a condition of participation. This study aims to assess the clinical impact of an antimicrobial stewardship program and a clinical decision support tool on minimizing the empiric use of carbapenems in the emergency department and intensive care units at a 574-bed community hospital.

METHODS: This study was approved by the Institutional Review Board. The electronic medical record was queried for patients who were started empirically on any carbapenem in the emergency department or intensive care units from October 2015 to December 2015. Following the implementation of an antimicrobial stewardship program and clinical decision support tool in September 2016, the same patient population was identified for the period of November 2016 to January 2017. The following data was collected: patient demographics, indication for carbapenem use, source or suspected source of infection, duration of carbapenem therapy, previous and concomitant antibiotic use, and documented allergies to beta lactams. If available, culture and susceptibility data, culture history, incidence of Clostridium difficile, 30-day readmission, and 30-day mortality data was noted. The primary outcome measure is duration of carbapenem therapy. Secondary outcomes measures include C. difficile rates, lengths of stay, 30-day readmission rates, and 30-day mortality rates. All data was recorded without patient identifiers to maintain confidentiality.

RESULTS: Pending data analysis.

CONCLUSION: Pending data analysis.
TREATMENT PATTERNS AND OUTCOMES OF ACINETOBACTER INFECTIONS. Nathalie Quach, Shiyi Geng, Y-Nha Nguyen, Valley Baptist Medical Center, Brownsville, TX.

PURPOSE: Within the recent years, *Acinetobacter* spp. have gained great interest due to their global emergence of multidrug-resistant (MDR) or even pan-resistant isolates. Antibiotics active against these MDR organisms are few, and currently, there are a limited number of clinical studies that support one treatment regimen over another. Therefore, the purpose of this study was to report different approaches and clinical outcomes in the treatment of *Acinetobacter* spp. infections at Valley Baptist Medical Center in Brownsville, Texas.

METHODS: This is a descriptive study where the electronic records of patients with positive cultures for *Acinetobacter* spp. between March 2015 and July 2016 were retrospectively reviewed. The following baseline characteristics were collected: age (years), gender, height (cm), weight (kg), penicillin allergy, nursing facility/assisted living facility resident, serum creatinine (mg/dL), comorbidities, previous admission within 90 days, previous intravenous antibiotics use within 90 days, use of vasopressors within five days of positive culture, use of mechanical ventilation within five days of positive cultures, and presence of tracheostomy tube on admission. Outcomes measured included inpatient mortality rate, recurrence rate, and clinical improvement rate. Additional data obtained from the patients’ charts included culture source (blood, urine, sputum, wound, abdominal fluid), susceptibility results, antibiotics used, length of hospital stay (days), length of antibiotic therapy (days), and length of intensive care unit stay (days).

RESULTS: A total of 34 electronic records were reviewed. The sources of the *Acinetobacter* spp. cultures were reported as: 6% blood, 9% urine, 59% sputum, 35% wound, and 6% abdominal fluid. Out of the 34 isolates of *Acinetobacter* spp., 71% were categorized as MDR organisms. About 65% of patients received monotherapy, 2% received dual antibiotics, and 3% received combination treatment with three or more antibiotics. Inpatient mortality rate was 3% with a recurrence rate of 15%. Clinical inpatient improvement was identified in 65% of patients.

CONCLUSION: The applicability of the findings of this study to other institutions may be limited due to variations in local resistance rate and the hospital’s formulary, which may preclude the use of specific antibiotics. Nonetheless, the findings of this study should be beneficial and may serve as a guide in the treatment and management of *Acinetobacter* spp. infections.

APPROPRIATENESS OF CLOSTRIDIUM DIFFICILE MANAGEMENT IN A TERTIARY CARE HOSPITAL. Mary R. Shreffler, Maegan M. Whitworth, Texas Tech University Health Sciences Center School of Pharmacy, Amarillo, Texas.

BACKGROUND: *Clostridium difficile* (C. difficile) is a gram-positive, anaerobic, spore-forming bacterium that has been linked with hospital-associated infections. The Center for Disease Control states *C. difficile* is a common cause of healthcare-associated infections in the United States. *Clostridium difficile* infections (CDIs) have been increasing in incidence and severity and are associated with recurrence as well as the presence of the more virulent strain, North America Pulsed field type 1 (NAP1). Current guidelines recommend treatment for CDI based on disease severity and recurrence. Several risk factors have been identified for CDIs including recent antibiotics, proton pump inhibitors, and transmission in the inpatient setting.

PURPOSE: The primary objective of this study is to assess appropriateness of CDI treatment based on severity classification and evidence-based guideline recommendations. Secondary objectives include evaluating the incidence of CDIs as well as determining the frequency and impact of the NAP1 strain, recurrence, and known risk factors for CDIs within a tertiary care hospital.

METHODS: This is a retrospective cohort study consisting of eligible patients admitted to the Northwest Texas Healthcare System in Amarillo, Texas. This analysis will include adult subjects admitted between January 1, 2015 to December 31, 2016 with a diagnosis of CDI. Subjects will be identified through a query of inpatient medical records using ICD-10 codes and confirmed by manual chart review. Descriptive statistics will be used for baseline demographics and the primary objective. Categorical variables will be analyzed using the Fisher’s exact or chi-square test as appropriate. Continuous data will be compared using the Student’s T-test. Logistic regression will be conducted to assess risk factors.

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

IMPACT OF A PHARMACIST-DRIVEN ANTIMICROBIAL STEWARDSHIP PROGRAM ON ANTIBIOTIC DURATION IN AN EMERGENCY DEPARTMENT. Adaku Onwubuya, Chris Tawwater, Jennifer Tawwater, Megan Geurds. Texas Tech University Health Sciences Center School of Pharmacy; Abilene, TX.

BACKGROUND: 1 out of 5 emergency department visits due to an adverse drug event is related to antibiotic use. Duration and increased exposure to antibiotics increase the risk of adverse events. Thus, avoiding unnecessarily long durations of antibiotics can decrease the risk associated with antibiotic use. Development of antimicrobial stewardship programs (ASPs) helps combat adverse outcomes associated with antibiotic use. Since the emergency department (ED) serves as a transitional area between inpatient and outpatient setting, the ED is an ideal location to target and manage antibiotic prescribing patterns. Several studies have assessed the role of a pharmacist in the ED; however, the utility of ASPs without a dedicated ED-pharmacist is uncertain. Although the results of several studies demonstrate the pharmacist’s ability to facilitate de-escalation of therapy, appropriate duration of antimicrobial therapy is still a major concern. Furthermore, most studies that assess duration of antimicrobial therapy before and after pharmacy intervention were not performed in an emergency department setting.

PRIMARY OBJECTIVE: This study aims to determine if a pharmacist’s involvement in an antimicrobial stewardship
resistant organisms, such as vancomycin resistant enterococcus (VRE), ampicillin resistant enterococcus, and methicillin resistant staphylococcus aureus were present in 8.2% of positive cultures.

CONCLUSION: Based on interim data, concordance did not affect patient outcomes. Evaluation of the microbiology of each risk group demonstrated areas where improvements of initial empiric antibiotic selection can be made.

XIB – INFECTIOUS DISEASE/HIV

PL XI-8
VANCOMYCIN VERSUS LINEZOLID FOR PNEUMONIA PATIENTS WITH ACUTE KIDNEY INJURY. Priyanka Patel, Erica Wilson, Minh Hong, Medical Center Hospital, Odessa, TX.

PURPOSE: At Medical Center Hospital, the majority of vancomycin is ordered under the designation “pharmacy to dose” and when patients are in acute renal failure, a pulse dosing strategy has often been used. In acute renal failure situations, this strategy is only employed until there is improvement or stability in renal function in which maintenance doses can be safely scheduled and traditional monitoring begun. The purpose of this study is to analyze efficacy of vancomycin versus linezolid use in pneumonia in patients with acute kidney injury at Medical Center Hospital, Odessa, TX.

METHODS: Using the inclusion and exclusion criteria, data collected retrospectively from institution’s electronic medical records for pneumonia and acute kidney injury.

RESULTS: in progress

CONCLUSIONS: We hypothesized that the efficacy and safety of vancomycin utilization is comparable to linezolid in patients presenting with acute kidney injury at the Medical Center Hospital. Additionally, use of vancomycin and linezolid in patients with acute renal injury has similar adverse effect profile when pulse-dosing strategy is used.

PL XI-7
EVALUATING GUIDELINE CONCORDANCE IN THE MANAGEMENT OF INTRAABDOMINAL INFECTIONS. M. Paul Nguyen, Betina Daniel, Matthew Crotty, Methodist Dallas Medical Center, Dallas, TX.

PURPOSE: To evaluate concordance to guideline directed therapy for the management of intraabdominal infections at Methodist Dallas Medical Center and its effects on patient outcomes.

METHODS: In this retrospective observational study, 221 patients were treated for intraabdominal infection (IAI) and received at least 24 hours of antibiotic therapy. Patients were categorized as either hospital-healthcare acquired (HHA), high-risk community acquired (HRCA), or mild-moderate community acquired (MMCA). Therapy was defined as guideline concordant based on three criteria: appropriate initial empiric antibiotic choice, appropriate duration of antibiotics, and an attempt of source control. The primary outcome was composite in-hospital mortality and 30-day readmission. Secondary outcomes included length of stay and overall description of infection.

RESULTS: In-hospital mortality or 30-day readmission occurred in 19 of 125 (15%) patients in the guideline concordant group as compared to 20 of 96 (21%) in the guideline discordant group. Secondary outcomes: length of stay was an average of 11.48 days for the concordant group and 12.34 days for the discordant group (P=0.71). The most predominant organism in both groups was E.coli. Resistant organisms, such as vancomycin resistant enterococcus, and methicillin resistant staphylococcus aureus were present in 8.2% of positive cultures.

CONCLUSION: Based on interim data, concordance did not affect patient outcomes. Evaluation of the microbiology of each risk group demonstrated areas where improvements of initial empiric antibiotic selection can be made.

PL XI-9
DEVELOPMENT OF A COMPARATIVE HIV COMMUNITY VIRAL LOAD MAP FOR THE GREATER NEW ORLEANS AREA. Victoria T. Nguyen, Lori A. Gordon, Jeffrey Percak, Daniel Sarpong, Jeffrey G. Shaffer, Jason Halperin, Maria Frontini, C. Lynn Besch, Christopher Gillard, Xavier University College of Pharmacy/Louisiana State University Health Sciences Center, New Orleans, LA.

PURPOSE: To determine if a correlation exists between HIV community viral load (CVL) and HIV incidence in the Greater New Orleans area and to compare the HIV community viral load according to: retention-in-care, age, gender identity, and race/ethnicity.

METHODS: Using geographic information system (GIS) technology, we generated a HIV community viral load map, by zip code. This map utilized data collected from the electronic health record (EHR) of one of the largest Ryan White HIV clinics in the Greater New Orleans area between January 1, 2015 and December 31, 2015. Patients’ zip codes were the primary exposure factor. Other exposure or confounding factors were: all viral loads of 2015, age, gender identity, and race/ethnicity. Descriptive statistics
will be performed to describe sample characteristics. The relation between HIV viral load and incidence will be determined using correlation analysis. Two sample independent t-tests or analysis of variance (depending on the level of categorization of independent variables) will be performed to assess differences in viral load relative to the exposure factors. Statistical tests will be performed at 0.05 significance level using SAS 9.4.1. This study was approved by the Xavier University of Louisiana Institutional Review Board.

RESULTS: We used the EHR from the University Medical Center New Orleans Infectious Diseases Center to examine the trends in the CVL by zip code. Mean CVL was calculated as the mean of all viral loads reported during 2015 for all clinic patients with at least one viral load during that year. ArcGIS (v6.3, ESRI, Redlands, CA) was used to generate the CVL map. Final results are still pending.

CONCLUSION: PENDING

PL XI-10
FLUOROQUINOLONE USE AFTER
ANTIMICROBIAL STEWARDSHIP PROGRAM IMPLEMENTATION. Ashley Feik-Campbell, Shelly Simon, Theresa Yarger, Baylor Scott & White All Saints Medical Center, Fort Worth, Texas.

PURPOSE: Resistance to fluoroquinolones is rising each year and their use is often associated with serious adverse events. In light of this, the FDA has issued a new black-box warning (BBW) regarding the use of fluoroquinolones and recommends using alternative agents for acute sinusitis, acute bronchitis and uncomplicated urinary tract infections (UTIs). Reducing the use of fluoroquinolones may limit the emergence of resistance and avoid associated adverse events. The purpose of this study is to determine if the implementation of an Antimicrobial Stewardship Program (ASP) will decrease the overall use of fluoroquinolones at Baylor Scott & White All Saints Medical Center.

METHODS: This study has been approved by the Institutional Review Board (IRB) for approval. An electronic medical record system was used to identify patients who have been treated with a fluoroquinolone for a suspected or confirmed infection during the same time frame before and after the implementation of the ASP. The following data was collected: patient demographics, allergies, length of stay, antibiotic start date, antibiotic stop date, and concomitant antibiotic use. If available, adverse events, indication, specimen type, current and previous culture results, sensitivities, 30-day readmission and 30-day mortality data were also collected. The electronic medical record was reviewed, if necessary, to determine the type of suspected or confirmed infection, risk factors for resistant organisms, recent antibiotic therapy, and potentially associated adverse events. ASP intervention documentation will be reviewed to determine if pharmacist recommendations were accepted or denied and any therapeutic changes that resulted from the intervention. All data has been recorded without patient identifiers to maintain patient confidentiality. A comparison of overall fluoroquinolone use prior to and after implementation of an ASP committee was compiled after reviewing the number of patients treated with levofloxacin or ciprofloxacin, appropriateness of therapy, associated adverse events, days of fluoroquinolone therapy and days of total antibiotic therapy.

RESULTS: Data collection in process

CONCLUSION: Data collection in process

PL XI-11
EVALUATION OF CLINICAL OUTCOMES IN
HIV/HEPATITIS C CO-INFECTED PATIENTS
TREATED WITH DIRECT ACTING ANTIVIRALS
FOR HEPATITIS C IN AN AMBULATORY CARE
SETTING. Sumanth M. Reddy, Teddy Zerai, Michael George, Harris Health System, Houston, TX.

PURPOSE: The direct-acting antivirals are highly effective and well tolerated in clinical trials. However, there were marked differences in the patient demographics between patients in the clinical trials and our institution’s patients. As a state funded health system that serves primarily the indigent the cost of these medications presents a significant barrier to providing and receiving treatment. This study aims to determine the real-world effectiveness of the direct-acting antiviral therapy in HIV/HCV co-infected patients in an ambulatory care setting within this population.

METHODS: This was a descriptive study that involved a retrospective chart review of patients’ data from our hospital’s electronic medical record system. The data collected included: number experiencing virological cure (sustained virological response at 12 or 24 weeks for non-cirrhotic and cirrhotic patients respectively), source of funding, adherence/follow-up, and number of treatment-related adverse events.

RESULTS: A total of 101 patients were analyzed during the timeframe of January 1st, 2014 to November 1st, 2016. 94% (95/101) of patients were genotype 1. 76.2% (77/101) patients received ledipasvir/sofosbuvir containing regimens while 23.8% (24/101) patients received non-ledipasvir/sofosbuvir treatment regimens. 93.1% (68/73) patients who received ledipasvir/sofosbuvir containing regimens achieved virological cure whereas 100% (19/19) of patients receiving non- ledipasvir/sofosbuvir antivirals experienced virological cure (p=0.0083). Additionally, 4 patients had virological failure in the non-cirrhotic subgroup, and 1 patient had virological failure in cirrhotic subgroup (p=0.2273). Patient medication assistance programs (manufacturer funded) accounted for 51.5% of funding while Medicare and private insurance accounted for 42.5% and 6% respectively. For compliance the median number of follow-up visits was 4 and the median number of missed doses was zero. Approximately 72% (72/101) of patients did not report any adverse events related to treatment. The adverse events reported in the remaining 28.7% (29/101) were mild in severity.

CONCLUSION: Based on the data obtained, the efficacy and safety of direct-acting antivirals in our patient population were similar to findings in previous trials. In addition to high efficacy for Hepatitis C treatment, the direct-acting antivirals resulted in minimal side effects none of which were severe. The efficacy found was consistent even in patients who missed several doses. The cost of these antivirals was primarily subsidized by manufacturer-funded patient assistance programs and Medicare and thus minimized cost to our institution.
PL XI-12
PRESCRIBING PATTERNS IN PYELONEPHRITIS.
Justin D. Shanks, Sebastian Perez, Jerry Smith, Hannah Ehrenfeld, Scott & White Medical Center - Temple, Temple, TX.

PURPOSE: The Infectious Diseases Society of America (IDSA) recommends fluoroquinolones for the treatment of pyelonephritis. In facilities where resistance exceeds 10% alternative regimens augmented with ceftriaxone or aminoglycosides have been recommended. Nevertheless, practitioners routinely prescribe fluoroquinolones as monotherapy. Additionally, the IDSA recommends cautionary use of oral beta-lactams for the treatment of pyelonephritis due to high rates of resistance, inferior efficacy, and higher rates of relapse. Consequently, the use of oral beta-lactams for pyelonephritis remains unclear. This study is designed to retrospectively categorize antibiotic regimens prescribed for pyelonephritis and to collect data about the local antibiotic susceptibilities of urinary pathogens.

METHODS: Once approved by our Institutional Review Board, this retrospective review will be conducted on patients with pyelonephritis admitted to a 636-bed level I trauma academic teaching regional health science center. Inclusion criteria will be as follows: patients at least 18 years of age, ICD-9 or ICD-10 code for pyelonephritis, and symptoms of pyelonephritis upon admission. Data collected will include: antibiotic choice, dose, route, frequency, duration, and the time from empiric therapy to targeted oral therapy. The primary endpoint is the incidence of prescribed empiric and targeted antibiotic regimens for pyelonephritis. The secondary endpoint is the antibiotic susceptibility rate of urinary pathogens.

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

CONCLUSION: Unable to make a conclusion at present.

PL XI-13
ANTIBIOTIC PRESCRIBING PATTERNS IN ADULTS DIAGNOSED WITH NOSOCOMIAL PNEUMONIA: RETROSPECTIVE CHART REVIEW.
Sana Qureshi, Benjamin Trinh, Ashley Middlebrooks, Sebastian Perez, Tiffany LaDow, Charlotte Farris, Scott & White Medical Center, Temple, TX.

PURPOSE: Unnecessary broad-spectrum antibiotics and increased duration of therapy can lead to numerous negative patient outcomes. The most recent Infectious Disease Society of America guidelines for hospital-acquired (HAP) and ventilator-associated (VAP) pneumonia provide limited guidance on de-escalation of antibiotics, but have recommended a shorter duration of therapy for all patients of approximately 7 days. Anecdotal observation of the duration of therapy and oral antibiotics chosen for patients with nosocomial pneumonia at Scott & White Medical Center indicates inconsistencies in prescribing patterns. Our study aims to review the current trends in prescribing patterns, focusing on duration and intravenous to oral therapy transitions.

METHODS: A retrospective chart review was conducted on nosocomial pneumonia patients admitted between August 25th 2015 to August 25th 2016. Inclusion criteria was as follows: patients age 18 years or older with documented diagnosis of HCAP, HAP or VAP. Data was collected with a focus on days of antibiotic administration prior to de-escalation to oral therapy, final oral antibiotic and total duration of therapy. Primary endpoints were to categorize the types of oral antibiotics these patients are transitioned to when completing therapy and the total duration of antibiotic therapy prescribed. Secondary endpoints included time to de-escalations, length of stay, and 30-day readmission rate. All data will be maintained confidentially according to Scott & White Medical Center protocol for private health information.

RESULTS: Our findings were based on preliminary data with a sample size of 150 patients; the patient median age was 71.5 years (27 – 97). Our patient sample size was comprised of an even split 50/50 men and women. Ninety percent of the patients were diagnosed with HCAP. The most common inpatient oral therapies prescribed to the patients in this study were levofloxacin and doxycycline. Outpatient oral therapy was prescribed to 57.33% of patients, with the most common drugs being cefdinir, levofloxacin and doxycycline. The median duration of outpatient therapy was 6 days (0 – 19). The median duration of total therapy (including inpatient and outpatient, IV or oral therapies) was 10 days (1 – 33).

CONCLUSION: Based on preliminary data, physicians at Scott & White Medical Center predominantly prescribe levofloxacin when transitioning to oral therapy and treat for more than the recommended total 7 days of therapy for nosocomial pneumonia.

XIC – GENETICS & INFECTIOUS DISEASE/HIV

PL XI-14
IMPLEMENTATION OF A PHARMACY-DRIVEN METABOLIC VALIDATION TESTING IN A NATIVE AMERICAN POPULATION. Jamie Wroge, Stacy Gee, Travis Freeze, Carrie Law, Steven Fillmore, Chickasaw Nation Medical Center, Ada, OK.

Purpose: The use of metabolic validation with genetic testing is the first step towards personalized healthcare. The objective of this study is to determine how metabolic validation in a Native American population at the Chickasaw Nation Medical Center can help improve patient care by tailoring drug therapy to the patient which may help to decrease adverse events, improve targeted therapies and dosing, and help choose a more efficient, cost-effective medication.

Methods: The electronic medical record system will be used to identify patients who qualify for laboratory testing criteria for metabolic validation testing with one or more of 3 panels including neurology, cardiology, and/or thrombophilia. Pharmacists will screen patient and perform the cheek swab. The test is sent for analysis. Imperative results are sent to the provider immediately and all results are scanned into the electronic health record note template for the health care team to review.

Results: A preliminary analysis of 75 patients with metabolic validation was performed. Of those patients who were tested 81.3% were poor metabolizers of CYP 3A5, while intermediate metabolizers of CYP 3A5 accounts for 17.3% of the patients. Ultra-rapid metabolizers of CYP 1A2 make up 65.3% of patients.
Conclusion: Efforts are progressing towards having specific pharmacogenomics information about Native American population. More data needs to be collected before a wide spread conclusion can be made about how the Native American population might respond to medications.

**PL XI-15**

**IMPACT OF VERIGENE ASSAY AND ANTIMICROBIAL STEWARDSHIP INTERVENTION ON TIME TO TARGETED ANTIBIOTIC THERAPY FOR STAPHYLOCOCCUS AUREUS BACTEREMIA AT AN ACADEMIC MEDICAL CENTER.** Joylaine Speaks, R. Scott Ferren, Natalie Williams-Bouyer, Regina L. Ramirez, Wai-Ying M. Lam, UTMB Health, Galveston, TX.

**PURPOSE:** Over recent years, significant developments in rapid diagnostic testing have decreased the time to microbial identification. While traditional microbiology culture and susceptibility testing takes days to provide results, the Verigene Blood Culture-Gram Positive (BC-GP) assay is an FDA-approved test that provides the genus, species, and resistance of bacteria detected from blood cultures in 2.5 hours. The purpose of the study is to investigate the impact of the Verigene BC-GP assay in conjunction with an antimicrobial stewardship intervention (ASI) on the time to targeted antibiotic therapy for the treatment of methicillin-sensitive *Staphylococcus aureus* (MSSA) and methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia.

**METHODS:** A retrospective chart review was conducted and included all adult patients, 18 years or older, with a positive blood culture for MSSA or MRSA at UTMB Health. Patients were included in one of three study groups: the pre-Verigene group (March 2013 to January 2014), the Verigene-only group (March 2014 to January 2015), and the Verigene with ASI group (March 2016 to January 2017). The following patient characteristics and indicators of clinical status were collected: demographic and co-morbidity data, total parenteral nutrition status, presence of an Infectious Diseases consult, dates of hospital and intensive care unit (ICU) admission and discharge, maximum temperature, peripheral white blood cell count, and ICU status at time of the blood culture draw. Microbiology data included date and time of culture collection, positive culture per gram stain, and culture results. Antibiotic data collected included all antibiotics received by the patient and date and time antibiotics were initiated and discontinued. Additional data collected included suspected source of infection and date of death, if available. The primary outcome is to determine the impact of the Verigene BC-GP assay with ASI on time to targeted antibiotic therapy. Secondary outcomes include hospital length of stay (LOS), ICU LOS, 30-day mortality, antibiotic costs, and 30-day readmission rate. Institutional Review Board approved this study.

**RESULTS:** A total of 186 patients were included in this study: 55 patients in the pre-Verigene group, 70 patients in the Verigene-only group, and 61 patients in the Verigene with ASI group. Fifty-eight percent of all collected patients had MSSA, while 42% of patients had a positive blood culture for MRSA.

**PL XI-16**

**MAKING A DIFFERENCE – IDENTIFYING FACTORS OF SEVERE CLOSTRIDIUM DIFFICILE DIARRHEA IN THE NEUTROPENIC HOST.** Luke Weber, Jon D. Herrington, Scott and White Medical Center-Temple, Temple TX.

**Introduction:** Opportunistic infections by Clostridium difficile are the most common cause of nosocomial diarrhea. Per IDSA C. difficile guidelines, the severity of the disease and the initial treatment is based upon a collection of patient factors, one of which is an elevated white blood cell count. However, in neutropenic patients this risk factor cannot be utilized. The purpose of this evaluation is to examine what other criteria will be correlated to severe disease in neutropenic patients.

**Methods:** This IRB-approved retrospective review will examine neutropenic cancer patients diagnosed with C. difficile associated diarrhea and use regression analysis to ascertain what patient characteristics are linked to severe outcomes. Primary endpoints defining severe disease include death, colectomy, or ICU admission secondary to C. difficile infection. Inclusion criteria are: cancer patients who have received chemotherapy and within 30 days developed neutropenia (ANC less than 2000) and C. difficile infection, or have underlying neutropenia during the active C. diff infection. Data points to be collected are as follows: malignancy, age, gender, history of COPD or diabetes, nasogastric tube insertion, type of chemotherapy and antibiotic use in the past 30 days, albumin, creatinine, temperature, length of hospital stay prior to positive C. difficile PCR, date of last hospitalization, acid suppression therapy in the past 30 days, systemic steroid use in the past 30 days, history of inflammatory bowel disease, and initial C. difficile therapy (drug, dose, frequency, duration).

**Results:** To be disclosed

**Conclusions:** To be disclosed

**PL XI-17**

**AN EVALUATION OF THE ACCURACY OF ALLERGY ASSESSMENTS IN THE INPATIENT SETTING.** Alyssa Simpson, Victoria Miller, Ashley Selby, Kathryn Astle, University Health Shreveport – Shreveport, LA.

**Purpose:** The purpose of this project is to investigate the high number of penicillin allergies lacking reaction descriptions in the inpatient setting. The primary objective of this study is to evaluate the accuracy of a non-pharmacist provider obtained allergy history. The secondary objective is to determine the number of clarifications made due to the allergy and the average time spent by a pharmacist clarifying the allergy.

**Methods:** This is a single-center, prospective quality improvement study using the electronic health record to identify patients with a reported penicillin allergy. Accuracy of the allergy assessments was determined by comparing the description of the allergy before and after a pharmacist-conducted allergy history.

**Results:** An analysis of 125 patients with a documented penicillin allergy was performed. Of the 125 patients in the study, 71 (56.8%) were initially lacking allergy descriptions. After pharmacist intervention, 96 (76.8%)
allergy descriptions were updated from the original description within the electronic health record. After completion of all allergy assessments, each penicillin allergy was categorized into one of the following categories: true allergy, adverse effect, and undetermined. Based on the reaction description, it was determined that 15 (12%) of the reported penicillin allergies were true allergies, while 56 (44.8%) and 54 (43.2%) were determined to be adverse reactions or undetermined, respectively. In addition, 46 patients (36.8%) had received another beta-lactam antibiotic after the reported penicillin allergy. Upon review of the electronic health record, pharmacists clarified penicillin allergy reports on 40 occasions and spent an average of 8.5 minutes on each clarification.

CONCLUSION: The current method for assessing allergy histories in the inpatient setting is suboptimal, resulting in inadequate and/or inaccurate allergy descriptions.

PL XI-18

Purpose: Until July 2016, sofosbuvir/ribavirin (SOF/RBV) remained acceptable for treating HCV genotype 2 and 3, based on demonstrated clinical trial cure rates (sustained virologic response [SVR12]) of 56-97%. However, the diversity in populations represented in these trials has been limited. Additionally, previous investigations have not explored the potential impact of baseline depression on SVR12 in patients treated with SOF/RBV. Thus, the objective of this study is to compare the SVR12 in genotype 2 versus genotype 3 patients treated with SOF/RBV at the University Medical Center New Orleans Hepatitis Clinic and to determine if depression, race and insurance status are correlates of SVR12.

Methods: This single-center, retrospective analytic study was approved by the Xavier University of Louisiana Institutional Review Board. The study sample included all genotype 2 and 3 HCV patients treated with SOF/RBV at the clinic. The primary outcome measure was SVR12, as determined by HCV viral load <25 IU/mL at ≥12 weeks following completion of treatment. Exposure measures included age, race, gender, insurance type, and baseline depression. Descriptive statistics will be used to describe baseline characteristics and to estimate SVR12 rates of genotype 2 and 3 patients. The study estimated SVR12 rates will be compared to SVR12 rates estimated from clinical trials using a z-test. Two-sample t-tests or chi-square tests will be used to compare selected exposure variables (baseline depression, race, and insurance status) and SVR12 rates between genotype 2 and 3 patients. All statistical tests will be performed at a significance level of 0.05 using SAS 9.4.1.

Results: Research in progress.

Conclusion: Research in progress.

PL XI-19
EFFECTIVENESS OF AN ANTIBIOTIC STEWARDSHIP DRIVEN VANCOMYCIN DE-ESCALATION PROTOCOL. Andrea Whitaker, G. Christina Gutierrez, Reed Hall, Matt Davis, Nicole Wilson, and Kristi Traugott, University Health System, San Antonio, TX.

BACKGROUND: Antibiotic stewardship programs (ASPs) have been shown to reduce antibiotic resistance and improve utilization of limited resources. De-escalation protocols are an effective ASP intervention. Additionally, the Joint Commission has released new requirements for ASPs to implement evaluation of current antibiotic regimens and provide follow-up recommendations.

PURPOSE: To evaluate the effectiveness of an electronic medical record (EMR) clinical note entered by an ASP pharmacist to provide a recommendation for de-escalation of vancomycin on eligible patients.

METHODS: Prospective data collection was completed at a single institution from November 2016 to February 2017 after an ASP clinical note was placed in the EMR. Results were compared to retrospectively collected data from September 2014 to March 2015 prior to the ASP clinical note implementation for vancomycin de-escalation. Data was collected on duration of vancomycin, difference in antibiotic use at 5 days, nephrotoxicity, cost differences, and appropriateness of recommendation.

RESULTS: There were 44 patients in the antibiotic stewardship intervention (ASI) group and 46 in the control group. The median time to discontinuation in hours was lower in the ASI group 89 (IQR: 72-119) compared to control 124 (101-160), p=0.001. The ASI group had lower average total hospitalization cost for vancomycin of $37 ($29-$50) and laboratory cost for levels of $12 ($6-$18) compared to the control $52 ($42-$67), p=0.001, and $18 ($12-$24), p=0.0473, respectively. In the ASI group, 34 recommendations were accepted, 3 were accepted after follow up call, and 7 were not accepted. Only two patients had vancomycin reinitiated after de-escalation due to no cultures and decompensation after de-escalation. Nephrotoxicity was observed in 5 patients in the ASI group compared to 1 in the control group, p=NS.

CONCLUSION: Implementation of the ASI decreased hospitalization cost for vancomycin by appropriately decreasing duration of use and lowering the number of vancomycin levels obtained. Placement of an EMR clinical note by ASP provides a feasible mechanism for providing recommendations on antibiotics and could help meet requirements set forth by the Joint Commission.
XI A – INTERNAL MEDICINE

PL. XII-1
BEYOND THE SLIDING SCALE: IMPROVING GLYCEMIC MANAGEMENT IN NON-CRITICALLY ILL MEDICAL PATIENTS THROUGH PHARMACIST INTERVENTIONS. Lynn Dang, Linda Vu, Megan Anderson, Amy Schilling, Memorial Hermann Hospital System, Houston, TX.

Background: It is estimated that hyperglycemia affects 38–46% of non-critically ill patients in the hospital. Poor glycemic control is associated with increased risk of infection, longer length of hospital stay, and higher mortality rates. For non-critically ill patients admitted to the hospital, The American Diabetes Association recommends basal insulin in patients who either have poor oral intake or are taking nothing by mouth and for patients with good nutritional intake, an insulin regimen with a basal, nutritional, and correctional component is preferred. However, these methods are often underutilized and sliding scale insulin remains a common approach for glycemic control in the hospital. Studies have found the best way to achieve glycemic control is to work collaboratively in multidisciplinary teams in order to meet the complex needs of diabetic patients. Despite numerous studies about pharmacists having a positive impact on outpatient glycemic control, the impact of a pharmacist on a multidisciplinary team in the hospital setting has been limited.

Purpose: To assess the impact of interventions regarding inpatient glycemic management made by a pharmacist utilizing an evidence-based algorithm during clinical monitoring activities.

Methods: This observational study evaluating pre- and post-implementation of a pharmacist-driven inpatient glycemic management algorithm for non-critically ill patients is being conducted over a 10 month time period. Patients aged 18 – 79 years with two or more blood glucose readings of greater than 180 mg/dL admitted to the pilot medical unit were included in the study. Patients admitted for diabetic ketoacidosis or hyperosmolar hyperglycemic syndrome, who had an insulin pump, were pregnant, and/or were on concentrated or combination insulin products were excluded from the study. The primary outcome was percent of blood glucose within therapeutic range, which was was split into three categories: 70 – 110 mg/dL, 111 – 140 mg/dL, and 141 – 180 mg/dL. Secondary outcomes included percent of recommendations made by a pharmacist using the algorithm, percent of acceptance of recommendations by providers, and percent of patients on a basal-bolus regimen. In addition, the incidence of hypoglycemia was assessed as a safety endpoint.

Results: Data collection is in progress.

Conclusions: Pending completion of data collection.

PL. XII-2
THE EFFECT ON CUMULATIVE BENZODIAZEPINE USE WHEN INSTITUTING A SYMPTOM-TRIGGERED THERAPY OPTION WITHIN AN EXISTING ORDER SET FOR PATIENTS WITH ALCOHOL WITHDRAWAL. Steven J. Braun, Archana Banerjee, Brendon Hogan. Central Texas Veterans Health Care System, Temple, TX.

Purpose: Previous, published studies have shown that for patient’s undergoing alcohol withdrawal, symptom-triggered benzodiazepine therapy based upon CIWA-Ar (Clinical Institute Withdrawal Assessment for Alcohol Scale) led to decreased total benzodiazepine use compared to fixed-dose therapy. The objective of this study is to determine that if the implementation of a symptom-triggered benzodiazepine therapy option in a currently existing order set containing only a fixed-dosing therapy option, would aid in decreasing cumulative benzodiazepine use within this population.

Methods: This study will be a quality improvement project submitted to the research committee for approval. It will be a retroactive chart review of the computerized database, where patients will be selected based on having a diagnostic code of alcohol withdrawal in addition to receiving at least one dose of a benzodiazepine while inpatient. The study time frame will be 6 months prior and 6 months after the new symptom-triggered option will be added to the alcohol withdrawal medication order. Current providers will be educated on the new option and will have the opportunity to ask questions regarding the details of the new symptom-triggered option. Clinical data as well as patient’s baseline data will be collected in this study. This will include the patient’s age, gender, race, past medical history, and outpatient medication records. Other clinical data will include the inpatient medication record (including benzodiazepine usage), CIWA-Ar scores, recorded days of hospitalization, ADRs, vitals, and pertinent lab values. All data included PHI will be stored on an encrypted drive and destroyed after data analysis is complete. Data collected regarding the cumulative amount of benzodiazepine use will be compared between the already in place fixed-dosing protocol compared to the new option of symptom-triggered treatment based on CIWA-Ar scores. The comparison will be analyzed to determine if the new therapy option reduced benzodiazepine use in this inpatient population.

Results: Pending

Conclusion: Pending

PL. XII-3
THE UTILITY OF PRE-STeady state ANti-XA LEVELS FOR Enoxaparin. Emily Selby, James Sanders, Kristen Maxwell, JPS Health Network, Fort Worth, TX.

Introduction: Therapeutic anticoagulation with low molecular weight heparins often supplant unfractionated heparin due to more predictable pharmacokinetics, improved subcutaneous bioavailability, and fewer monitoring requirements. Despite this, high-risk populations, such as renally impaired, obese, and pregnant patients may necessitate monitoring Anti-Xa levels to assess for potential drug accumulation leading to increased risk of bleeding as well as monitoring therapeutic efficacy. However, a paucity of evidence exists to guide when the
optimal time is to acquire Anti-Xa levels and whether a pre-steady state level is useful to predict the occurrence of supra-therapeutic Anti-Xa levels in high risk patient populations. This study aims to evaluate if a relationship exists between a pre-steady state Anti-Xa value and subsequent steady state Anti-Xa levels in patients deemed high-risk where monitoring is necessary.

METHODS: The study involved a retrospective chart review of patients who were monitored via the JPS Institutional Protocol, which requires acquisition of pre-steady state Anti-Xa levels in the following patients: those with a creatinine clearance <50 mL/min, obese patients with a total body weight ≥150 kg, or pregnant patients. Per this protocol, Anti-Xa levels are collected four hours after the first therapeutic dose (pre-steady state) of enoxaparin and subsequent Anti-Xa levels at steady state, after at least three therapeutic doses have been administered. Adult patients treated from November 2014 to September 2016 were included if both a pre-steady state and steady state Anti-Xa level were drawn 3 to 5 hours after enoxaparin administration. The primary outcome measured the proportion of patients with an elevated pre-steady state Anti-Xa level, defined as ≥0.5 units/mL, and an elevated steady state Anti-Xa level, defined as ≥1 unit/mL and therefore considered supra-therapeutic. A secondary outcome evaluated was clinically significant bleeding which was a composite of major and minor bleeding according to TIMI criteria or bleeding requiring medical attention defined as a bleeding event that requires medical treatment, surgical treatment, or laboratory evaluation and does not meet criteria for a major or minor bleeding events. Data was analyzed using descriptive statistics and chi-square analysis as appropriate.

RESULTS: Of the 30 patients meeting inclusion criteria, 10 had both an elevated pre-steady state and steady state Anti-Xa levels while 10 did not have an elevation of either level. The remaining 10 patients had either an elevated pre-steady state or steady state Anti-Xa level. Hence, 33% of patients demonstrated an elevated pre-steady state and elevated steady state Anti-Xa levels (p=0.03). No major or minor bleeding was seen.

CONCLUSIONS: The utilization of pre-steady state Anti-Xa levels in place of steady state levels could provide earlier identification of elevated levels and reduce the risk of bleeding in select patients. However, these findings provide evidence pre-steady state Anti-Xa levels do not consistently predict steady state levels, and the utilization of pre-steady state Anti-Xa levels alone would likely be a suboptimal approach to monitoring.

PL XII-4
HISTORICAL STANDARD OF CARE VERSUS LIPOSOMAL BUPIVACAINE IN VIDEO-ASSISTED THORACOSCOPY SURGERY (VATS): A RETROSPECTIVE SINGLE-CENTERED COHORT STUDY. Jennifer Shin, Eric Hoenicke, Kyle Maskell, Eardie Curry, Nicolas Forcade, St. David’s South Austin Medical Center, Austin, TX.

PURPOSE: Pain management is an essential component of postoperative care. Inadequate pain control interferes with early ambulation, thus, predisposing patients to venous thromboembolic events. Additionally, suboptimal analgesia contributes to poor coughing effort, resulting in retention of upper airway secretions prolonging postoperative hospital length of stay. Liposomal bupivacaine is a locally-acting anesthetic, labelled for post-operative analgesia. Currently available data is sparse for post-operative analgesia in patients undergoing video-assisted thoracoscopic surgery (VATS). Prior to the approval of liposomal bupivacaine, our cardiothoracic surgeons utilized other locally-acting anesthetics. The overall purpose of this study is to evaluate whether liposomal bupivacaine contributes to better outcomes compared to historical standard of care.

METHODS: This retrospective single-centered cohort study was approved by the local Institutional Review Board. The facility electronic medical record system was utilized to identify patients who underwent VATS lobectomy. Patients at least 18 years old and who underwent robotic lobectomy by the selected surgeon from November 1st 2010 to November 1st 2016 were included. Patients were excluded if they were pregnant or underwent robotic lung biopsy or left mitral clipping procedures. Eligible patients were divided into two groups based upon liposomal bupivacaine use or historical standard of care. The following data will be collected: patient age, gender, weight, and height. Data collected will be divided into two groups based upon liposomal bupivacaine use or historical standard of care. The primary outcome will compare opioid consumption measured in morphine equivalence through post-operative day seven in patients that were administered liposomal bupivacaine vs historical standard of care. The secondary outcomes will compare length of hospital stay, intensive care unit duration, readmission within 30 days of discharge, all doses of non-opioid medication administration, naloxone utilization, pain scores through post-operative day seven, and anti-emetic medication use.

RESULTS: Data are being analyzed and results will be described once complete.

CONCLUSION: Conclusions will be drawn from analyzed data and presented once complete.

PL XII-5
RETROSPECTIVE IDENTIFICATION OF DRUG THERAPY PROBLEMS IN AN INPATIENT HEART FAILURE POPULATION WITH RECENT 30 DAY READMISSION. Brettie MacDonald, Charlotte Farris, Delaney Ivy, Sebastian Perez, Illiana Rangel, Gordon Ang, Scott & White Medical Center - Temple, Temple, TX.

PURPOSE: Heart failure is a chronic and life-threatening condition with a 30-day all-cause readmission rate around 25%. Medication therapy issues have been identified as potential contributors to hospital readmissions, however the characterization of drug therapy problems in this population has not been described in literature. The objective of this study is to characterize drug therapy issues occurring at discharge in patients readmitted within 30 days of a previous hospitalization for heart failure.

METHODS: Using data retrospectively collected from the institution’s electronic records, we reviewed the medication regimens of heart failure patients readmitted within 30 days of a heart failure exacerbation. The primary endpoint was the identification and characterization of drug therapy errors including omissions of recommended therapy, failure to achieve target medication doses, drug-disease interactions, duplications of therapy, and incorrect medication formulation. The secondary endpoint was rates of patient adherence to the prescribed regimen. Patients 18 years of age or older hospitalized with a primary diagnosis...
of a heart failure exacerbation and a subsequent all-cause hospitalization within 30 days were included. Patients with an admission for hospice care were excluded from the study.

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

**CONCLUSION:** A number of heart failure drug therapy errors were identified in patients hospitalized within 30 days of a heart failure exacerbation.

**PL XII-6**

**EVALUATION OF INPATIENT MANAGEMENT OF SUPRATHERAPEUTIC INR IN WARFARIN PATIENTS.** Alejandra Ibarra, Sebastian Perez, Charlotte Farris, Delaney Ivy, Scott & White Medical Center – Temple, Temple, TX.

**PURPOSE:** In 2012, the American College of Chest Physicians (ACCP) updated their guidelines to facilitate warfarin reversal in the setting of supratherapeutic INR. However, a recent study has demonstrated that only about 25 percent of vitamin K utilization is in concordance with ACCP guideline recommendations. The aim of this study is to evaluate physicians’ vitamin K prescribing patterns in patients with supratherapeutic INR values in comparison to 2012 ACCP Evidence-Based Management of Anticoagulant Therapy guidelines at Scott & White Medical Center - Temple.

**METHODS:** A retrospective chart review was conducted from March 1, 2014 through August 31, 2016 which included adult patients on warfarin who received vitamin K in response to a supratherapeutic INR with or without bleeding complications. Patients diagnosed with cirrhosis or acute hepatitis were excluded. The primary endpoint was rate of concordance of vitamin K prescribing with 2012 ACCP guideline recommendations. Secondary endpoints included percentage of patients who received low dose or high dose vitamin K, route by which vitamin K was administered, percentage of patients who received repeat doses, time to target INR, percentage of patients to experience a bleed after vitamin K administration, percentage of patients in which procedures were delayed due to persistent, supratherapeutic INR, and incidence of stroke or venous thromboembolic events within 30 days of warfarin reversal.

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

**CONCLUSION:** To be disclosed.

**PL XII-7**

**INCIDENCE OF GASTROINTESTINAL BLEEDING IN VETERANS TAKING DIRECT ORAL ANTIMOULANTS VERSUS WARFARIN.** Tenika Akinkuolie, Rick Weideman, Oluchi Emelogu, VA North Texas Healthcare System and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, Texas.

**BACKGROUND:** Warfarin has been the mainstay for the prevention and treatment of various conditions requiring anticoagulation. Numerous disadvantages associated with warfarin use have led to the development of direct oral anticoagulants (DOACs). While large clinical studies comparing DOACs to warfarin have shown similar efficacy in the prevention and treatment of venous thromboembolism and nonvalvular atrial fibrillation, the risk of gastrointestinal (GI) bleeding with DOACs remain controversial. GI bleeding causes considerable morbidity and mortality and poses a huge burden on healthcare costs. Some studies have shown an increased risk of GI bleeding with DOACs compared to warfarin, while other systematic reviews have shown no difference between DOACs and warfarin. Due to conflicting evidence, the incidence of GI bleeding with DOACs has yet to be established.

**OBJECTIVE:** To evaluate the incidence of GI bleeding in veterans at the VA North Texas Healthcare System (VANTHCS) taking DOACs versus warfarin.

**METHODS:** This study is a retrospective chart review of patients 18 years and older who experienced a GI bleed while on anticoagulation therapy between 2012 and 2016. Electronic medical records were used to assess patient demographics, indication for therapy, time to GI bleed, as well as concurrent medications and comorbidities. Location of GI bleed and length of hospital stay were also noted.

**RESULTS:** Data collection and analysis currently in progress.

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

**XIIIB – INTERNAL MEDICINE**

**PL XII-8**

**EFFECTS OF OBESITY ON WARFARIN REVERSAL WITH VITAMIN K.** Stanley A. Luc分工, Maegan M. Whitworth, Shawna E. King, Texas Tech University Health Sciences Center School of Pharmacy and Northwest Texas Healthcare System, Amarillo, Texas.

**BACKGROUND:** Phytonadione, or vitamin K1, is an antidote that reverses the anticoagulant effects of warfarin. Various factors may impact the efficacy of phytonadione in international normalized ratio (INR) reversal. Since it is a fat soluble vitamin, it has been proposed that phytonadione can be sequestered by adipose tissue contributing to lower circulating vitamin K in patients with higher body fat percentage. In result, this phenomenon may affect the bioavailability of administered phytonadione. Current literature suggests INR reversal may be influenced by phytonadione route, dose, and baseline INR. Warfarin reversal may also be affected by obesity as warfarin-related bleeding is higher in obese patients, and obesity is a predictor for anticoagulation reversal failure with prothrombin complex concentrate (PCC). However, while
other reversal agents such as fresh frozen plasma (FFP) and PCC have specified weight-based dosing, current guidelines and manufacturer recommendations for phytonadione suggest a general dosing range. Furthermore, literature evaluating the impact of obesity on phytonadione-induced INR reduction for warfarin reversal is lacking.

**PURPOSE:** The primary aim of this study is to determine if obesity affects complete or partial warfarin reversal following administration of phytonadione. Secondary objectives include determination of an optimal dosing method for phytonadione in obese patients, assessment of the impact of obesity on patient outcomes in warfarin reversal, and evaluation of prescribing patterns of phytonadione in a community hospital.

**METHODS:** This is a retrospective cohort study of adult subjects who required warfarin reversal with phytonadione and were admitted to Northwest Texas Healthcare System between January 1, 2014 and December 31, 2016. Eligible subjects will be selected through a query of inpatient medical records and confirmed by manual chart review. Descriptive statistics will be utilized to analyze baseline demographics. Continuous data between groups will be compared using the Student’s T-test, whereas categorical variables will be analyzed using chi-square or Fisher’s exact test, as appropriate. Multivariate, logistic regression will be conducted to assess factors associated with INR reversal and patient outcomes.

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

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**PL XII-9**

**INCIDENCE OF SIMULATED NEEDLESTICKS DURING NEEDLE CAP REMOVAL USING COMMON CAP REMOVAL TECHNIQUES IN STERILE COMPOUNDING.** Pamela Ochoa, Jose Vega, Cody Faubion, Hendrick Medical Center/Texas Tech University Health Sciences Center School of Pharmacy, Abilene, Texas.

**PURPOSE:** The purpose of this study is to compare the incidence of simulated needlesticks using three common needle cap removal techniques.

**METHODS:** This study has been submitted to the Institutional Review Board for approval. Three volunteer pharmacy students have been recruited to participate in the study. Each student will complete twenty needle cap removals per day on six different days using one needle cap removal technique while being observed. Students will alternate the assigned cap removal technique to reduce the influence of bias. Three different removal techniques will be evaluated. These techniques will include pulling the syringe and cap straight in opposite directions; pushing the cap and syringe toward each other prior to pulling in opposite directions; and holding the wrists of both hands together while pulling the cap and syringe in opposite directions. Blunted needles will be used to simulate needlesticks without injury. If the tip of the blunted needle touches the hand or skin of a participant, it will be counted as a simulated needlestick. The number of simulated needlesticks for each cap removal technique will be recorded by the observer. The incidence of simulated needlesticks will be compared between each technique. The primary endpoint will be the incidence of simulated needlesticks.

**RESULTS:** Data collection is ongoing.

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**PL XII-10**

**RETROSPECTIVE EVALUATION OF BIVALIRUDIN IN CATH LAB.** Khiet Nguyen, Andrew Orsa, Justin Gonzalez, Y-Nha Nguyen. Valley Baptist Medical Center, Brownsville, TX.

**PURPOSE:** Given the conflicting results from the literature regarding the use of bivalirudin in primary percutaneous coronary intervention (PCI) settings, in August 2015, our pharmacists collaborated with the cardiologists to develop recommendations for when to use bivalirudin in the cath lab. For patients undergoing primary PCI with a femoral approach in non-ST elevation myocardial infarction (NSTEMI)/unstable angina (UA) and elective or urgent PCI for stable/unstable angina, bivalirudin is recommended. For patient undergoing primary PCI for ST-elevation myocardial infarction (STEMI) or primary PCI with radial approach for NSTEMI/UA, unfractionated heparin plus a glycoprotein IIb/IIIa is recommended. The purpose of this research project is to evaluate if there are any differences in bleeding rates in patients undergoing PCI after these recommendations were implemented.

**METHODS:** Using data retrospectively collected from the institution’s electronic records, we evaluate data in the cath lab before versus after our recommendations were recommended. Patients were included if they were at least 18 years old and received antiplatelet agents (aspirin and clopidogrel or prasugrel with guidelines recommended loading dose at the time of PCI and continue with maintenance dose. Patients were excluded if they were scheduled for CABG within 28 days from PCI, pregnant, or incarcerated patients. The primary outcome was the proportion of patients with clinically relevant bleeding from time of catheterization to discharge, as defined by the Bleeding Academic Research Consortium (BARC) grade 2, 3, and 5. The secondary endpoints consist of the proportion of patients who had at least one incidence of a major adverse cardiac event (MACE) within 28 days from time of catheterization. For each patient, the following data is recorded: patient’s indication for PCI and medical history, patient’s bleeding risk by CRUSADE score, main culprit lesion, whether the patient had balloon or stent, activated clotting time (ACT), femoral or radial access, type of stent, single or multiple stent, use of bivalirudin, whether the patient has revascularization, reinfarction, stroke, or mortality within 28 days, and BARC score.

**RESULTS:** Results are pending.

**CONCLUSION:** We anticipate there will be no differences in bleeding outcomes between the two groups.
PL XII-11
INVESTIGATION OF CONTRAST VOLUME TO CREATININE CLEARANCE RATIO AND CONTRAST INDUCED NEPHROPATHY FOLLOWING PERCUTANEOUS CORONARY INTERVENTIONS. Tyler Raduzycki, Brian Gulbis, Phillip Weeks, Memorial Hermann- Texas Medical Center-Houston, Texas.

PURPOSE- This study sought to investigate the occurrence rates of contrast induced nephropathy in patients after percutaneous coronary intervention receiving various volumes of intravenous contrast as a function of baseline renal function.

BACKGROUND- Contrast induced nephropathy (CIN) has been defined as the third most common cause of hospital acquired kidney failure. Reported incidence after percutaneous coronary intervention (PCI) varies greatly in the literature, from 3-30%. Contrast induced nephropathy after percutaneous coronary intervention has been independently associated with increased mortality compared to matched patients without CIN. Large contrast volumes, high osmolality of contrast agents, and baseline renal dysfunction have all demonstrated increased risk of development of contrast induced nephropathy.

METHODS- Using data retrospectively collected from the institution’s electronic medical records, we investigated the incidence of contrast induced nephropathy in all patients undergoing percutaneous coronary intervention. Patients were then stratified based on baseline renal function, and volume of contrast administered, to find if there was a breakpoint of baseline renal function to contrast volume ratio after which CIN incidence was greatly increased.

RESULTS: An interim analysis of 150 patients was performed. 59 patients developed contrast induced nephropathy. Average baseline creatinine clearance of those developing CIN was 80.6 ml/min and baseline creatinine clearance in those not developing CIN was 88.4ml/min (p=0.19). Contrast volume to creatinine clearance ratio in those developing CIN was 3.17 and in those not developing CIN, contrast volume to creatinine clearance ratio was 2.97 (p=0.7).

CONCLUSIONS: Based on the interim analysis, a baseline creatinine clearance, or contrast volume to creatinine clearance ratio cannot alone be used to define those at higher risk for developing contrast induced nephropathy. Our data needs to be analyzed fully to verify these results.

PL XII-12
IMPACT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) MANAGEMENT EDUCATION ON HOSPITAL READMISSION RATES. Hongmei Wang, Megan Anderson, Roxanne Byrne, Amy Schilling, Memorial Hermann Hospital System, Houston, TX.

Background: Chronic lower respiratory disease, primarily chronic obstructive pulmonary disease (COPD), was the third leading cause of death in the United States in 2014. COPD exacerbations account for one of the most common causes of hospitalization and is associated with high readmission rates. In the United States 19-23% of patients admitted for COPD exacerbation are readmitted with 30 days following discharge. Pharmacologic therapy for COPD is used to control symptoms, reduce the frequency and severity of exacerbations, and improve patients’ quality of life. Medications delivered through respiratory inhaler devices is the primary treatment option for COPD. Studies have demonstrated 62-86% of patients misuse inhaler devices, placing them at increased risk for poor outcomes and hospitalization. Teaching inhaler techniques to COPD patients has been associated with fewer acute care events within 30 days post-discharge. Unfortunately, there is a paucity of data on reducing rehospitalization by aiming at improving self-management skills in COPD patients.

Purpose: To determine the impact of a pharmacy-trainee education program on disease, medication, and inhaler technique for COPD patients at Memorial Hermann the Woodlands Hospital.

Methods: This is a retrospective, single-center, 6-month, post-intervention study evaluating 30-day readmission rates in patients admitted to the hospital for a COPD exacerbation having received pharmacy-trainee education. The study included adult patients admitted to an inpatient nursing unit with a COPD exacerbation. Patients were excluded if admitted for asthma exacerbation, discharge to location other than home, cognitive impairment, airborne isolation, and death during hospitalization. The primary endpoint is 30-day all cause readmission rates. Secondary endpoints include reason of 30-day readmission and inhaler misuse rate as evaluated before and after patient education.

Results: Data collection in progress.

Conclusions: Pending completion of data collection.

XIIC – INTERNAL MEDICINE

PL XII-14
COMPARISON OF SURGICAL SITE INFECTION RATES IN POST-OPERATIVE ORTHOPEDIC SURGERY PATIENTS RECEIVING RIVAROXABAN COMPARED TO OTHER ANTICOAGULANT AGENTS FOR THROMBOPROPHYLAXIS. Courtney M. Ritchey, Stephen E. Michaud, Maryam Bayat. CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

Purpose: To compare the rate of surgical site infection within 30 days of total hip arthroplasty or total knee arthroplasty in patients who received rivaroxaban for thromboprophylaxis versus patients who received other anticoagulant agents.

Methods: Using Premier Hospital Database and ICD-9 codes, we identified all patients who underwent THA or TKA between September 2015 and September 2016, as well as patients who were readmitted within 30 days of their surgery. Electronic medical records were then utilized to collect data on a random sample of these patients to evaluate for any baseline differences or confounding factors for SSI between patients who received rivaroxaban and patients who received other means of anticoagulation. Patients on chronic anticoagulation prior to surgery and patients who underwent revision of THA or TKA were excluded. The primary outcome was the rate of SSI within

67
30 days of surgery in patients who received rivaroxaban compared to patients who received other anticoagulation strategies. Secondary outcomes included rates of VTE (deep vein thrombosis and pulmonary embolism) and major and minor bleeding.

RESULTS: A total of 1,026 patients underwent THA or TKA during the study period. Of the 1,026 patients, 860 received rivaroxaban (84%). Seventeen patients were readmitted within 30 days of THA or TKA (1.7%), of which 10 did not meet inclusion criteria for the study. Four patients were readmitted for SSI within 30 days of THA or TKA (0.4%). Two of these patients had positive cultures, one with *Citrrobacter koseri* and the other with Gram Positive Cocci without speciation. Three patients readmitted with SSI received rivaroxaban and one received enoxaparin followed by aspirin for thromboprophylaxis. Two patients were readmitted for major bleeds requiring transfusion. None of the patients were readmitted for VTE.

CONCLUSION: Clear trends in current data remain inconclusive due to small incidence of readmission and SSI, as well as the large difference in numbers of patients receiving rivaroxaban versus patients who did not receive rivaroxaban. There seems to be a lower incidence of SSI in this study population (0.4%) compared to what is reported in the literature (4%).

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**PL XII-15**

**EVALUATION OF WARFARIN DOSING IN PATIENTS WITH IMPAIRED RENAL FUNCTION AS COMPARED TO PATIENTS WITH NORMAL RENAL FUNCTION.** Fahad Aldahabi, Ellen Yin, Maryam Bayat; CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

**PURPOSE:** Warfarin remains the most widely used oral anticoagulant option for patients with end-stage renal disease (ESRD). Previous studies have shown that chronic kidney disease (CKD) and ESRD patients require an approximate dose reduction of 20% to maintain a therapeutic INR and may require less time to achieve a therapeutic international normalized ratio (INR) compared to patients with normal kidney function (NKF). The objective of this study is to evaluate warfarin dosing requirements and time to reach therapeutic INR in patients with NKF compared to patients with a creatinine clearance (CrCl) of < 30 mL/min (calculated via the Cockcroft-Gault equation) and/or patients on renal replacement therapy.

**METHODS:** This study is a single-center, retrospective, cohort observational study evaluating patient who received warfarin therapy under pharmacy consulting services at the study institution from September 1, 2013 to January 30, 2017. The primary endpoint was to compare the average daily dose of warfarin needed to reach a therapeutic INR in patients with NKF compared to that of patients with CKD or ESRD. Secondary endpoint was to evaluate time needed to reach therapeutic INR, number of patients with supratherapeutic INRs, and bleeding events.

**RESULTS:** A total of 100 patients were included in the study and assigned into two groups, NKF (n=50) and impaired renal function (IRF) which included ESRD and CKD patients (n=50). The mean age of the study’s subjects was 65.2 ±15.2 years. The most common indication for warfarin was atrial fibrillation (46% of patients). The mean daily dose to reach therapeutic INR was 5.8 ± 1.7 mg in NKF group and 6.3 ± 2.2 mg in IRF group (p=0.16). The time to reach a therapeutic INR was about 5 days in both groups. Patients on renal replacement therapy needed a higher dose to reach a therapeutic INR than patients without renal replacement therapy, the mean daily dose was 6.6 ± 2.2 vs 5.7 ± 1.7, respectively (p=0.02). There was no significant difference in bleeding episodes between groups (p=0.48).

**CONCLUSION:** Our findings suggest that patients with NKF and IRF require the same starting dose and same time to reach a therapeutic INR. Patients on renal replacement therapy required higher doses than those patients without renal replacement therapy.

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**PL XII-16**

**DIVERTICULITIS, ANTIBIOTIC USE, AND E. COLI RESISTANCE.** Charles, F Seifert, Benjamin A. Dargedt, Texas Tech University Health Science Center School of Pharmacy, Lubbock TX.

**PURPOSE:** To examine the relationship between diverticulitis outcomes and presentation and the growing resistance of *E. coli* to the standard antimicrobial agents used to treat diverticulitis. There is exhaustive literature discussing and exploring the treatment of diverticulitis with fluoroquinolones, however, to date, to our knowledge there have been no published studies that have examined the growing fluoroquinolone resistance of *E. coli* and its impact on diverticulitis.

**METHODS:** A retrospective chart review was conducted from the institutions electronic health records on adult patients with a diagnosis of diverticulitis requiring treatment with antibiotics from January 1st 1996 to December 21st 2016. We compared diverticulitis recurrence rates, mortality, age at presentation, surgical intervention, antibiotic selection, length of stay, and *E. coli* resistance to fluoroquinolone antibiotics over the time period available from the electronic health record.

**RESULTS:** Pending completion

**CONCLUSION:** Pending completion
PL XII-19
ARGATROBAN DOSING IN OBESITY. Stephanie Elagizi, Kyle Davis, Ochsner Medical Center, New Orleans, LA.

PURPOSE: Obesity has become an increasingly prevalent patient specific factor associated with alterations in pharmacokinetic and pharmacodynamic properties such as volume of distribution, tissue perfusion and clearance. These alterations are especially concerning when dosing high risk medications such as anticoagulants. Studies evaluating the dosing strategies of anticoagulants in obesity are lacking, with small number of studies finding that lower doses of unfractionated heparin may be required to achieve therapeutic efficacy. Argatroban is a highly selective parenteral anticoagulant that exhibits linear pharmacokinetics with weight being the most significant predictor of dosing requirements. However, argatroban requirements in the obese patient population have not been well established. The purpose of this study is to evaluate argatroban dosing requirements in obese versus non-obese patients treated with argatroban.

METHODS: This single-center, retrospective cohort study included patients 18 years or older with confirmed or suspected heparin induced thrombocytopenia (HIT), treated with argatroban for at least 12 hours. Patients were stratified by body mass index (BMI) into obese (BMI >30 kg/m²) and non-obese (BMI ≤30 kg/m²) groups. The primary outcome of the study was the mean maintenance dose to achieve two consecutive therapeutic activated partial thromboplastin (aPTT) times. Secondary outcomes included the rates of in-hospital thrombosis and bleeding.

RESULTS: A total of 121 patients were included in the study. The baseline characteristics of the patients were similar between the two groups (mean BMI obese vs nonobese groups: 39.3 vs 23.9 kg/m²; p<0.0001). There was no difference in mean maintenance argatroban dose in obese versus non-obese patients (1.15 vs 1.49 mcg/kg/min; 95% CI -0.046-0.742; p=0.083). In-hospital major bleeding did not differ between obese versus non-obese patients (54.2% vs 56.5%; p=0.81). In-hospital thrombosis also did not differ between the two groups (DVT: 3.4% vs 4.8%; p=0.99, PE: 1.7% vs 0%, p=0.49). Liver failure and multi-organ dysfunction were associated with significantly lower maintenance doses (p=0.01; 0.033).

CONCLUSION: Obese patients required similar mean argatroban maintenance doses compared to non-obese patients, and experienced similar rates of thrombosis and bleeding. The results support the use of actual body weight for argatroban dosing as currently recommended.
XI – INTERNAL MEDICINE & PEDIATRICS/NEONATOLOGY

PL XIII-1
ASSESSING MEDICATION ADHERENCE IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA). Shaoping M Sunner, Annabel Schumaker, San Antonio Military Medical Center, Fort Sam Houston, TX, Thomas Shank, Pfizer.

PURPOSE: To assess whether there is a correlation between the Compliance Questionnaire for Rheumatology (CQR-19) and the eight-question Morisky Medication Adherence Scale (MMAS-8). We will also determine if there is a potential medication adherence issue in patients with rheumatoid arthritis (RA) taking oral disease modifying anti-rheumatic drugs (DMARDs).

METHODS: At the time of check-in for a routine appointment in the Rheumatology clinic, patients were invited to participate in a survey. Patients were informed that the survey was part of a research study and that they may choose to participate or not to participate without affecting their care at the clinic. Interested patients were provided a questionnaire containing both the MMAS-8 and CQR-19. The CQR was used to assess potential medication adherence, then the CQR and MMAS were compared to assess whether the shorter MMAS could be used to assess medication adherence in patients taking oral DMARDs for RA. The completed surveys were collected in designated drop boxes located at the clinic front desk and exam rooms. At the end of each business day, the primary investigator (PI) for the study collected the completed survey forms. Survey collection occurred for 6 weeks until the sample size was met. In this study the correlation will be used for primary analysis.

RESULTS: Pending

CONCLUSION: To be determined

PL XIII-2
ASSESSING THE IMPACT OF DRONABINOL ON PATIENT WEIGHT IN A CHRONIC PAIN POPULATION. Robert Kennedy, Emily Davies, Thomas Shank, San Antonio Military Medical Center (SAMMC), Fort Sam Houston, TX.

Objectives:
Dronabinol, or synthetic delta-9-tetrahydrocannabinol, is an orally active cannabinoid and naturally occurring component of Cannabis sativa L. (marijuana). Dronabinol has an FDA labeled indication for appetite stimulation in patients with AIDS. Studies have demonstrated patients with HIV and AIDS experience increased appetite and may gain as much as 3.2kg but could also lose as much as 2kg while taking dronabinol. This weight gain is contrary to a epidemiological study that found the prevalence of obesity in regular cannabis users to be lower than obesity rates in non-cannabis users. Another study demonstrated that cannabis use was associated with a higher caloric intake but not associated with a higher BMI. As evidence is building that dronabinol may have a place in chronic pain management it would be beneficial for providers to know if dronabinol may cause weight gain in a population where obesity may agitate their pain condition. This study will evaluate the impact dronabinol may have on weight in a chronic pain population.

Methods:
This will be a retrospective cohort study of Joint Base San Antonio military medical records database going back roughly two years to identify patients prescribed dronabinol for off label use in pain management. Patients who meet inclusion criteria will be reviewed to determine the initial date of dronabinol therapy and starting weight. Starting weight will be compared to weight three, six, nine, and twelve months later to determine any weight change. Dronabinol patients will be matched with pain management patients who did not receive dronabinol to serve as controls. Case-controls will be compared to determine any significant change in weight.

Results:
Results pending, research will be complete by April 2017

Implications/Conclusions:
Pending, conclusion will be completed by April 2017

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 Air Force, the Department of the Army, or the Department of Defense or the U.S. Government.

PL XIII-3
UTILIZATION OF THE MELDNa SCORE FOR PHARMACOLOGICAL VENOUS THROMBOPROPHYLAXIS IN HOSPITALIZED CIRRHOTIC PATIENTS. Elisabeth Kinaide, Crystal Franco-Martinez, Reed Hall, Laurajo Ryan, University Health System, San Antonio, Texas.

PURPOSE:
The MELDNa score is an excellent predictor of survival in cirrhotic patients, but whether it correlates with clot or bleed risk in patients using pharmacological venous thromboembolism (VTE) prophylaxis has yet to be evaluated. The primary objective of this study was to compare VTE rates in cirrhotic patients who received VTE prophylaxis versus those who did not.

METHODS:
A single-center, retrospective chart review analyzed 100 hospitalized cirrhotic patients over 18 years of age, with a total hospital length of stay of ≥ 4 days. Subjects were included into the treatment cohort if they received VTE prophylaxis with enoxaparin or unfractionated heparin (UFH) for ≥ 72 total hours within the hospital stay. These subjects were compared to a control group of cirrhotic patients who did not receive pharmacologic VTE prophylaxis. Patients were stratified into MELDNa scores as follows: <15; 15 – 30; >30, in order to assess how disease severity affects bleeding and clotting risk. Secondary objectives include comparing the use of VTE prophylaxis, anticoagulant utilized and bleeding events within, and between MELDNa categories. Baseline characteristics were analyzed to assess influence on VTE event rates. Logistic regression analyses were utilized to assess how the MELDNa score related to bleeding and thrombosis. We used Fisher exact or chi-squared test to analyze categorical data; continuous data was assessed using Wilcoxon rank-sum test.

RESULTS:
There were 24 patients in the VTE prophylaxis group and 76 in the control group. Thrombotic events in the control group occurred in five patients (7%) vs. one patient in the VTE prophylaxis group (4%) \((p = 1.00)\). VTE occurred in two patients in the MELDNa score <15 category (11%), three in the MELDNa score of 15 – 30 (5%), and one in those with MELD >30 (5%), there was no statistically significant differences between groups or compared to control. VTE prophylaxis was used in 16 (67%) MELDNa 15 – 30, 6 (25%) in MELDNa <15, and 2 (8%) in MELDNa >30 \((p = NS \text{ within and between all groups})\). Enoxaparin was used 67% of the time vs. 33% UFH. Of the baseline characteristics, increased age and post-surgical status were associated with increased risk of VTE on multivariate analysis \((p = 0.0105 \text{ and } 0.003, \text{ respectively})\). Seventeen bleeds occurred in the control group (22%) versus one in the prophylaxis group (4%) \(p = 0.0644\). There was no difference in bleeding stratified by MELDNa scores.

**CONCLUSION:**
Overall, VTE rates were low among hospitalized cirrhotic patients. There were numerically more bleeds in the control group, but baseline characteristics did not identify factors that would indicate these patients were at higher bleeding risk. Note that patients’ risk for VTE increased with age and those who were post-surgical. This finding may guide practice on which hospitalized cirrhotic patients could benefit from pharmacologic VTE prophylaxis.

**PL XIII-4**
**EVALUATION OF NON-SELECTIVE BETA-BLOCKERS ON MORTALITY IN PATIENTS WITH END-STAGE CIRRHOSIS.** Jenna L. Snoga, Rebecca L. Attridge, Russell T. Attridge, Kathleen A. Lusk, University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX.

**PURPOSE:** Evaluate the effect of non-selective beta-blocker use on mortality at 24-months in patients with end-stage cirrhosis.

**METHODS:** This study is a multicenter, retrospective chart review of all patients that received IV octreotide for an acute variceal bleed between July 1, 2006 and January 1, 2017. Eligible patients were those who met the criteria for end-stage cirrhosis. Receipt of a non-selective beta-blocker at discharge was used to stratify patients into two groups. The primary outcome measured for this study is mortality at 24 months. Secondary outcomes are mortality at 3 and 12 months, beta-blocker discontinuation rate, time to next hospitalization for a cirrhosis-related complication, rate of acute variceal bleeding, and cause of death.

**RESULTS:** Data collection and analysis are currently pending.

**CONCLUSION:** Data collection and analysis are currently pending.

**PL XIII-5**
**EVALUATION OF OFF-LABEL SPECIALTY DRUG USE AND REIMBURSEMENT IN A PEDIATRIC HEALTH SYSTEM.** Charles L. Golding, Jordan L. Whitehill, Children’s Health Children’s Medical Center, Dallas, TX.

**Background:** A specialty drug is a designation given to medications that are high cost, require special handling, administration or monitoring, and are generally used for complex, chronic and rare diseases. Examples of disease states treated using specialty drugs include autoimmune diseases and cancers.

“Off-label use” refers to use of a drug outside of the FDA labeled indications. It is unknown whether this influences reimbursement for specialty medications, however this is relevant to our patient population as less than 50% of medications include pediatric labeling.

Due to the high cost of specialty medications and the large proportion of total drug spending attributed to them, it is important to evaluate the rate of reimbursement for these products. This information may help institutions manage drug budgets and use of these products in the future. Specialty drug spending reached $121 billion on a net price basis in 2015, up more than 15 percent from 2014, and will account for almost half of the pharmaceutical industry’s revenues in 2020. Of the over 630 distinct research programs in Phase II or later, 37% are for medications in the specialty market.

**Objective:** The objective of this study is to evaluate the rate at which specialty medications are being used off label and the institutional reimbursement for these medications.

**Methods:** Specialty medications were selected for inclusion in this analysis if they appeared on at least one of the following pharmacy benefits manager’s (PBM) 2016 Specialty Drug lists: CVS, Accredo (Express Scripts) and Brovia (United Healthcare), were administered at least 1 time at our facility between July 1, 2015 and June 30, 2016, are CMS-identified revenue code 636, and created a $10,000 or greater charge to the patient per administration. Palivizumab was excluded, as its charges are managed per-patient, on the basis of an existing protocol within our facility. Reimbursement data will be gathered and evaluated.
completed these steps at their convenience through the use of provided instructions documents. Assessments were made available through the online service SurveyMonkey®. Education modules were made available online as invisible YouTube® videos.

RESULTS: Preliminary: Forty-seven subjects signed informed consent forms, and 30 subjects within the nursing and pharmacy professions have initiated the study. All 30 subjects completed the phase I pre-assessment yielding an average score of 46%, approximately 10 questions answered correctly out of 21 questions. Seventeen subjects completed the phase I post-assessment yielding an average score of approximately 77%, 16 questions out of 21 questions answered correctly. This shows the phase I education module enabled subjects to answer 6 more questions correctly on the phase I post-assessment thus improving their phase I pre-assessment scores by 31%. Nine subjects completed the phase II post-assessment, and none had prior education on utilization of the CAPD. These subjects produced an average score of 88% equaling approximately 12 out of 14 questions answered correctly.

CONCLUSION: Based on this preliminary data, pediatric delirium education modules are effective at improving pharmacist and nurse knowledge on pediatric delirium.

PL XIII-7
COMPARISON OF DEXAMETHASONE VERSUS PREDNISOLONE/PREDNISONE/METHYLPREDNISOLONE FOR THE USE OF ACUTE ASTHMA EXACERBATIONS IN HOSPITALIZED PEDIATRIC PATIENTS. Kristin Bohannon, Ronda Machen, Carolyn Ragsdale, Eimeira Padilla-Tolentino, Seton Healthcare Family, Austin, Texas.

PURPOSE: Systemic corticosteroids play an important role in acute asthma exacerbations. The use of dexamethasone has been well studied in the emergency department setting, but there is limited research on its use for hospitalized pediatric patients. The purpose of this study is to determine if a course of dexamethasone decreases the length of hospital stay for pediatric patients hospitalized with an acute asthma exacerbation as compared to a course of prednisolone/prednisone/methylprednisolone.

METHODS: This study is a single-center, retrospective, chart-review of pediatric patients hospitalized for an acute asthma exacerbation. In October of 2013, Dell Children’s Medical Center implemented a new pediatric asthma pathway which primarily utilizes dexamethasone for a mild-moderate asthma exacerbation; prior to this the standard of care was prednisolone/prednisone/methylprednisolone. Pediatric patients who received dexamethasone for an acute asthma exacerbation between June 1, 2011 and January 31, 2016 will be identified. Patients 2-18 years old who are hospitalized for more than 24 hours with a principle discharge diagnosis of asthma and who received a course of a corticosteroid will be included. The primary endpoint will be length of hospital stay between the two corticosteroid groups. Asthma symptom scores, milligrams of albuterol used in the first 24 hours, time to albuterol frequency of every four hours, time until oxygen supplementation is no longer needed, days of systemic steroid use, and readmission at 7 days will serve as secondary endpoints. Using an assumed 10% decrease in length of stay and a standard deviation of 0.7 days, 200 patients in each arm are required to achieve 80% power.

RESULTS: Data collection in progress. Results to be presented.

CONCLUSION: Pending final study results.

XIIIIB – PEDIATRICS & NEONATOLOGY

PL XIII-8
A STANDARDIZED VANCOMYCIN DOSING PROTOCOL IN A NEONATAL INTENSIVE CARE UNIT. Ashley Trojcak, Hilary Tice, Kelsey Trimble, Edward Martel, University Health, Shreveport, LA.

PURPOSE: To determine whether a vancomycin dosing protocol implemented in a neonatal intensive care unit was effective in achieving target trough concentrations between 10 and 20 mg/L. Secondary endpoints include the time it took to achieve target trough concentrations from the first dose given, area under the curve (AUC₂₄), and whether acute kidney injury occurred.

METHODS: This is a single-center, retrospective review of patient charts between January 2013, when the vancomycin dosing protocol was implemented, and July 2016. Charts reviewed included patients admitted to the neonatal intensive care unit who received intravenous vancomycin with a trough level obtained for monitoring.

RESULTS: A total of 677 order numbers were reviewed with 195 vancomycin orders meeting the inclusion and exclusion criteria. There were 100 vancomycin orders dosed according to the protocol and 95 vancomycin orders dosed using an alternate strategy. Median gestational age at time of first dose was 32 weeks 6 days in the protocol group and 31 weeks 5 days in the alternate strategy group. Vancomycin goal trough concentrations were achieved in 62% of the protocol group and 41.1% in the alternate strategy group. Comparing the protocol and alternate strategy groups, the average therapeutic trough level achieved in the protocol group was 14.8 mg/L versus 12.8 mg/L in the alternate strategy group while the time to target trough from start of first dose to trough level drawn was 25.6 hours and 35.7 hours, respectively. Acute kidney injury occurred in 6 (7.9%) of the protocol group versus 12 (17.8%) in the alternate strategy group. However, removal of patients with a baseline serum creatinine of greater than 0.8 mg/dL from the alternate strategy group resulted in a total of 8 (11.9%) being defined as having an acute kidney injury. Average AUC₂₄ in the protocol group with therapeutic trough concentrations was 584 mg·h/L versus 518 mg·h/L in those dosed by an alternate strategy.

CONCLUSION: Based on the data, the standardized vancomycin dosing protocol implemented in the NICU was effective in achieving target trough concentrations between 10 and 20 mg/L with no increase in the occurrence of acute kidney injury.
PL XIII-9
EVALUATING AND ASSESSING READMISSION RATES IN THE UNIVERSITY HEALTH SHREVEPORT PEDIATRIC POPULATION.
Stephanie Hatten, Kelsey Trimble, Elizabeth Lafitte, Christopher Selby, Sabeen Habib, University Health Shreveport, Shreveport, Louisiana.

PURPOSE: The objective of this study is to determine parallels among pediatric patients who are re-admitted to the hospital. Using information gathered through comparing patients with frequent readmissions, including disease state, mismanagement of medications by the caregiver, and infection at the time of admission, high risk populations that may benefit most from pharmacist education prior to discharge or in the outpatient setting will be identified.

METHODS: This study has been approved by the Institutional Review Board. Patients eligible for retrospective chart review met the following criteria: age 0-18, admitted January 1, 2013 to January 1, 2015. Patient data was collected via the electronic medical record system. The following data was collected for each patient meeting inclusion criteria: patient medical record number, age, reason for readmission, admitting diagnosis, payor status, number of clinic visits, number of readmissions within one year of admission date, length of stay, and pertinent labs. The patient’s outpatient medication history including the use of compounded versus manufactured medication and where the patient normally fills his outpatient prescriptions was also collected. Readmission types were stratified into the following categories: (1) general disease state exacerbation, (2) infection, (3) medication induced illness/exacerbation.

RESULTS: Readmission rates within a one year time frame were evaluated. Of eligible readmissions, the disease state identified in the majority of readmits was sickle cell disease, taking responsibility for 26% of overall readmissions. Thirty day readmission rates consisted of 58% of overall readmissions, with sickle cell disease again being the most common disease state at 27.8%. Respiratory exacerbations due to etiologies including asthma and reactive airway disease were the second leading cause of readmission. Though only responsible for 6% of readmissions, those due to type 1 diabetes mellitus related readmissions had the highest occurrence of a potentially identifiable medication cause, where readmissions due to other etiologies may have been unavoidable due to the nature of the disease state.

CONCLUSIONS: Though some disease states will remain a source of pediatric readmissions due to their severe nature, direct pharmacist care could possibly make an impact in reducing future readmissions. Areas of interest in which a pharmacist may impact readmissions include sickle cell disease as well as type 1 diabetes mellitus.

PL XIII-10
HYDROXYCHLOROQUINE BLOOD LEVELS IN CHILDREN AND ADOLESCENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS (SLE).
Andrea A. White, M. Brooke Bernhardt, Anna Carmela Sagcal-Gironella, Eyal Muscal, Marietta DeGuzman, Texas Children’s Hospital, Houston, TX.

PURPOSE: Hydroxychloroquine (HCQ) is a key agent in the treatment of adolescents with systemic lupus erythematosus (SLE). HCQ has been shown to prevent flares, protect against diabetes mellitus, thrombotic events, dyslipidemia, and overall damage accrual in patients with SLE. Despite these benefits, studies suggest nonadherence to be a particularly pervasive problem with only 30-60% of SLE patients taking medications as prescribed. According to several reports blood HCQ concentration is a marker of SLE activity, with low concentration as a predictor of lupus flares. Due to the long half-life of HCQ, undetectable (or very low) blood concentrations are a reliable tool to assess medication non-adherence in SLE patients treated with this essential medication. In addition, the suggested target blood HCQ is a level of ≥1000 ng/mL. Ultimately, lack of adherence is associated with poor disease control. The purpose of this study is to implement a new practice standard of monitoring HCQ levels, and to improve the management of pediatric SLE by obtaining HCQ levels and correlating them with reported adherence in a multi-ethnic cohort of children and adolescents with SLE

METHODS: This was a single-center retrospective study. Patients were included if they were treated at our institution between November 2016-April 2017. They must have had a diagnosis of SLE and have received HCQ for at least 3 months. A new practice standard of monitoring HCQ levels in SLE patients was implemented. HCQ levels were collected and interpreted as follows: complete non-adherence: <200 ng/mL; partial adherence: 200-1000 ng/mL; qualify as therapeutic/adherent: ≥1000 ng/mL. Pharmacies listed in the patient’s chart were then contacted to obtain refill information in order to correlate them with HCQ levels. Pharmacy refill information, self and physician reported adherence, and HCQ blood levels were utilized to assess medication adherence to HCQ.

RESULTS: To be presented.

CONCLUSION: To be presented.

PL XIII-11
DOES LOW DOSE Vecuronium PROVIDE ADEQUATE PARALYSIS WITHOUT THE NEED FOR RE-DOsing IN PEDIATRIC PATIENTS UNDERGOING RAPID SEQUENCE INTUBATION COMPARED TO HIGH DOSE Vecuronium?
Danielle R. Thomas, Rachel Mathews, Kelechi Iheagwara, Brittany Wagner, Pamela McMahon, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

OBJECTIVES: To determine if the need for re-dosing is increased in patients who receive low dose vecuronium (0.1 mg/kg) during rapid sequence intubation (RSI) compared to those who receive high dose vecuronium (0.2 mg/kg).

METHODS: Patients less than 18 years of age undergoing RSI with vecuronium as the neuromuscular blocking agent were evaluated in this retrospective chart review. The electronic medical record of each patient was reviewed.
from admission to discharge evaluating dose, total number of doses, and intubating outcomes.

RESULTS: Pending
CONCLUSIONS: Pending

PL XIII-12
MORPHINE VERSUS METHADONE: DIFFERENCES IN DURATION OF THERAPY IN THE MANAGEMENT OF NEONATAL ABSTINENCE SYNDROME. Samantha Vogel, Lyndrick Hamilton, Carolyn Ragsdale, Eimeira Padilla-Tolentino, Seton Healthcare Family, Austin, TX.

PURPOSE: Neonatal abstinence syndrome (NAS) is a constellation of symptoms as a result of sudden opioid withdrawal following birth from in-utero exposure to opioids. Treatment of NAS is important to prevent sequelae such as poor weight gain and seizures. Currently there is no guideline consensus for the ideal treatment of NAS. The goal of this research is to establish the mean duration of therapy (DOT) for neonates treated for NAS with morphine or methadone. Our hypothesis predicts that neonates who are treated with morphine require shorter DOT compared to neonates treated with methadone.

METHODS: In August 2014, The Seton Healthcare Family Pharmacy and Therapeutics committee implemented a new NAS management protocol. The new protocol shifted the focus of NAS treatment strategies to a morphine-driven protocol compared to a methadone-driven protocol. Neonates diagnosed with NAS at Seton Healthcare Family will be identified through a national neonatal database. Neonates who received NAS treatment with methadone between January 2005 and August 2014 and morphine between August 2014 and October 2016 will be included in this retrospective study. The primary objective is DOT of each opioid. DOT of morphine-treated neonates will be compared the DOT of methadone-treated neonates. Hospital length of stay, need for adjunctive treatment (i.e., clonidine or phenobarbital), need for escalation in therapy (e.g., requiring a dose increase in opioid used), time to NAS capture (time which NAS symptoms were controlled and allowed for subsequent weaning of opioid), cumulative opioid dose received, number of neonates who experienced wean failure (e.g., requiring a dose increase in opioid used after weaning was initiated), and hospital readmissions within 30 days will be included as secondary outcomes. Assuming a 25% reduction in DOT, 28 neonates will be required in each arm to achieve 80% power.

RESULTS: Data collection is 50% completed and statistical analysis will follow.
CONCLUSION: Pending final study results.

PL XIII-13

PURPOSE: Very low birth weight premature neonates receive total parenteral nutrition (TPN) through an umbilical venous catheter (UVC) during the first days of life. Parenteral amino acid with cysteine improves calcium and phosphate solubility by decreasing pH but it increases chloride which may lead to metabolic acidosis. Continuous infusion of heparin-containing solution is given in umbilical artery catheter (UAC) and/or peripheral arterial line (PAL) to prevent catheter occlusion but the composition of the solution varies by institution. Typically, the solutions consist of one fourth to one half sodium chloride or sodium acetate. Evidence-base literature supporting the use of sodium acetate in umbilical catheter solutions is limited and there is no standard guideline recommending which heparin-containing solutions to use. The purpose of this study is to compare umbilical catheter infusion solutions and its effect on blood gas in correcting metabolic acidosis in neonates at Level III Neonatal Intensive Care Unit at Memorial Hermann The Woodlands Hospital.

METHODS: This retrospective, cohort study compares umbilical catheter solutions and its effect on blood gas in patients who received continuous infusion consisting of sodium acetate or sodium chloride from January 1, 2014 to September 30, 2016. Data was obtained at age 0 to 10 days (DOL0 to DOL10). Patients with birth weight less than 1500 grams who received sodium acetate or sodium chloride catheter infusion solutions were included in the study. Patients who received both sodium acetate and sodium chloride during the ten days of life or received infusion solutions only on the first day were excluded from the study. Blood pH, base excess, partial pressure of carbon dioxide (pCO2), hematocrit, and receipt of packed red blood cell (PRBC) transfusion were recorded for baseline and endpoint. The study was reviewed and approved by the Institutional Review Board.

RESULTS: A total of 149 neonates were evaluated and 38 neonates met inclusion criteria. Neonates were divided into two groups, chloride group (n = 18) and acetate group (n = 20). There were statistical differences in baseline characteristics for gestational age (28.4±1.6 weeks vs 24.7±1.9 weeks, p<0.001) and birth weight (979±238 grams vs 720±207 grams, p=0.001) between the two groups. There were no significant differences in blood pH, hematocrit and pCO2 at DOL10 between the groups, but base excess was statistically higher in the acetate group at DOL10 (-4.00 vs 0.00, p=0.006). The acetate group received significantly more PRBC transfusion (22% vs 75%, p=0.001).

CONCLUSION: No significant difference was observed at DOL10 except the base excess was significantly higher in the acetate group who also received significantly more PRBC transfusions.
PL XIII-14
IMPACT OF IMPLEMENTATION OF AN AUTOMATED DISPENSING CABINET (ADC) PROFILE DISPENSE CONFIGURATION ON POTENTIAL MEDICATION ERRORS IN THE EMERGENCY DEPARTMENT. Britney Henning, Wyley McCoy, Amy Martin, Craig Cocchio, Justin Hooper; CHRISTUS Trinity Mother Frances Hospital, Tyler, TX.

PURPOSE: The Joint Commission (TJC) and the Institute for Safe Medication Practices (ISMP) both support the prospective review of medication orders by pharmacists to optimize medication safety. This standard of care is not yet universally adopted in emergency departments across the nation. The purpose of this study is to determine if the implementation of an ADC profile dispense configuration, requiring pharmacist medication order review, is associated with a change in potential medication errors, defined as the wrong medication warning event rate at the time of bedside medication barcode scanning.

METHODS: This study has been submitted to the Institutional Review Board for approval. This is a study evaluating the impact of implementing a profile dispense configuration on the incidence of potential medication errors, as well as associated changes in the number of discontinued/expired order warnings and changes in barcode compliance. All information will be taken directly from reports generated monthly by the electronic medical record system, Epic, that specifically track the number of wrong medication warnings, discontinued/expired order warnings, and rates of barcode compliance based on the total number of medication administrations per department.

RESULTS: A total of 70,495 medication administrations were observed prior to and after implementation of profile dispense. 614 wrong medication warnings (1.81% warning rate) were observed during the 3 months prior to implementation versus 224 wrong medication warnings (0.61% warning rate) after implementation – a 67% relative reduction in errors (p<0.0001). The discontinued/expired order warning event rate also fell from 0.58% to 0.35% prior to and after implementation – representing a 40% relative reduction in this type of warning (p<0.0001).

CONCLUSIONS: The implementation of profile dispense configuration has significantly reduced the rate of wrong medication warnings as well as discontinued/expired order warnings generated by Epic. This data further supports pharmacist medication order review prior to medication administration. Ultimately, implementation of an ADC profile dispense configuration reduced potential medication errors and enhanced medication safety within our emergency care center.

PL XIII-15
EVALUATION OF THE CONVERSION FROM MEDICATION CHARGE ON DISPENSING TO CHARGE ON ADMINISTRATION IN A COMMUNITY HOSPITAL. Robert L. Holliday, Jenny Stemmm, Darin Smith, Norman Regional Health System, Norman, OK.

Purpose: Norman Regional Health System is a three-hospital non-profit community health system that utilizes an electronic medication administration record for documenting medication administration through a barcoded medication system. The pharmacy department currently generates a patient medication charge upon dispensing the medication, either directly from the pharmacy or from a dispensing cabinet. Discrepant billing practices may occur for several reasons including: 1) Medications not returned to the pharmacy for credit before processing the bill; 2) medication is lost or dropped on the floor requiring an additional dose that is inadvertently charged; 3) lack of administration documentation. By changing to a charge on medication administration process, the health system will ensure greater accuracy in billing. The health system will benefit from prevention of potential loss of Medicare reimbursements due to billing errors identified during an audit.

Methods: A complete list was made of all the areas where medications are dispensed and charged. This included the Pyxis machines, crash carts, totes and trays, outpatient infusion, and the dialysis unit. The areas were selected and audited against a patient’s bill to check for accuracy. A baseline was established based on the number of discrepancies. From the audits, it will be determined whether it will be appropriate for that area to be switched to a charge on administration status. Upon completion, pharmacy will work with Health Information Technology to implement the conversion to charge on administration. After implementation, a follow up audit will be completed to evaluate for improvements and accuracy in billing practices. Pre- and post-implementation pharmaceutical revenue will also be evaluated.

Results: Preliminary data show that the most common billing discrepancies occur with saline flushes, intravenous fluids, and medications administered in surgery or catheterization lab. Medications that are administered during surgery are documented in an anesthesia record rather than on the electronic medication administration record.

Conclusion: Based on preliminary data, switching certain areas within the health system to charge on administration may lead to improved billing practices. Areas that document on a paper record, such as surgery or catheterization lab, may need to be delayed in the switch to charge on medication administration until a solution for charting on the electronic medication administration record can be found.
PL XIII-16
FINANCIAL IMPACT OF TRANSITIONING FROM MEDICATION CHARGE ON DISPENSE TO CHARGE ON ADMINISTRATION. Pei Jen Lin, Stephen Ma, Patrick J. Birney, Julie K. Atay, A. Carmine Colavecchia, Alex C. Varkey, Jane S. Scott, Linda Haines, Houston Methodist Hospital, Houston, TX.

BACKGROUND: As healthcare institutions implement new electronic health record (EHR) information systems and adopt barcode medication administration (BCMA) technology, medication charging models may shift from charge on dispense (COD) to charge on administration (COA). Transitioning to COA may significantly impact pharmacy operations and revenue. There are potential risks of financial loss due to medication barcoding issues, low BCMA compliance, incomplete drug administration documentation, drugs missing from the EHR formulary, incorrect multipliers used for billing units, incorrect NDCs and numeric drug identifiers submitted for claims, and other factors. The objective of this study was to evaluate the financial impact of transitioning from COD to COA upon implementation of a new EHR.

METHODS: This single-center, retrospective, quality improvement project was exempt from Investigational Review Board review. Medication charge records were collected from the legacy hospital billing system and the new EHR system. The pre and post EHR implementation timeframes consisted of January through March 2016 and June through August 2016, respectively. The data included inpatient and outpatient charge quantities and amounts for each respective time period. The American Hospital Formulary Service Pharmacologic-Therapeutic Classification code (AHFS) was used to categorize medication utilization. The primary endpoint of the study evaluated the percent change in pharmacy gross revenue in the three-month period pre and post new EHR implementation. Secondary endpoints analyzed were percent changes in pharmacy gross revenue per equivalent patient day, per equivalent admission, pharmacy gross inpatient revenue per inpatient day, and outpatient revenue per outpatient visit.

RESULTS: A total of 12,907 drug items were evaluated and categorized to their respective therapeutic classification. For the primary endpoint, the overall pharmacy gross revenue observed a 3.4% decrease post-implementation of the new billing methods and EHR. The top ten therapeutic classes identified made up 88% of the entire pharmacy gross revenue, and they observed a 9.4% decrease in adjusted pharmacy gross revenue per equivalent admission. Four out of the top ten drugs by therapeutic class observed an increase in revenue as a result of increased charge capture rates.

CONCLUSION: Transitioning from COD to COA upon implementation of a new EHR system has potential financial risks and may result in a decrease in gross pharmacy revenue. Performing continuous internal revenue audits is important and can help to identify areas of opportunities to increase charge capture rates.

PL XIII-17
OPTIMIZATION OF BULK MEDICATION UTILIZATION TO IMPROVE PATIENT CARE AND DECREASE MISSING DOSE REQUESTS IN A LARGE ACADEMIC TEACHING FACILITY. Marcy L. Pilate, Vy Nguyen, Sima Desai, Christina Pereira, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

PURPOSE: The primary objective of this project is to determine an effective method to transfer bulk medications between nursing units for patients during their hospital admission. The secondary objective is to reduce the amount of nursing time spent on missing medication dose requests for bulk products, decrease the amount of medication waste, decrease unnecessary pharmacy spending, and improve patient care while preventing delays, by providing medications at the point of care.

METHODS: Bulk medications returned to the inpatient pharmacy will be collected for a period of three months and sorted based on dosage form and drug name. A cost-benefit analysis will be conducted to compare the amount of medication requests to the amount of medications returned to the pharmacy. After medication is collected and a cost-benefit analysis is performed, nurses on each shift of a medicine unit will be asked to follow a specific standard of practice for three months to help with the transferring of medications. Upon transfer, the nursing staff will be required to document the transfer of all bulk medications not provided in the automated dispensing cabinets. A section for medication transfers will be added to the nursing transfer summary sheet template and eventually in the electronic health record.

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

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

PL XIII-18
ANALYSIS OF THE IMPACT OF MISSING DOSES AND WASTAGE OF IV MEDICATIONS AT AN ACADEMIC MEDICAL CENTER. Rachel Yue, Brian Cohen, Latresa Billings, Jacque Borel, Belen Tilahun, UT Southwestern Medical Center, Dallas, TX.

PURPOSE: Missing medication messages are sent when a nurse cannot find a medication that should be administered. Missing doses have implications related to efficiency, efficacy, and cost. In April 2015, a medication tracker system, PharmTrac®, was implemented with one of its goals to help decrease the number of missing doses that have to be redispensed by tracking exactly where the drug is in the delivery process. The main objective of this project is to determine elements of the process which are affecting efficiency, workflow, and cost, and to model an improved methodology for data collection to help with ongoing waste tracking.

METHODS: A list of some of the most frequently missing and most expensive IV medications was identified based on both the number of missing doses and cost. Using data retrospectively collected, we compared six months of missing dose data before PharmTrac® implementation to six months of data after PharmTrac® implementation for these medications. The missing doses that had to be redispensed were looked at further. The financial impact of
both labor and product costs associated with the missing medications was determined before and after implementation. The current medication distribution, delivery, and documentation process was observed and evaluated. This was done by performing a prospective two-week observational study to more closely identify the point of distribution breakdown that created an opportunity for the missing doses and observe the details of the missing medication messages and tracking in PharmTrac®. Opportunities to help further decrease the number of missing doses and eliminate unnecessary costs will be identified through the observations and results of this project.

RESULTS: There were a total number of 5638 medication orders before PharmTrac® implementation and 8455 medication orders after PharmTrac® implementation. From these orders, there were 1018 missing dose messages before PharmTrac® implementation and 609 missing dose messages after PharmTrac® implementation (p<0.0001). The missing doses that were redispensed were 96 before PharmTrac® implementation and 73 after PharmTrac® implementation (p<0.0001). The product cost was $36,120 before PharmTrac® implementation and $26,668 after PharmTrac® implementation. Labor cost, which factored in average time to remake a missing dose and a pharmacy technician’s salary, was $598.42 before implementation and $931.76 after implementation. The top causes of missing dose messages include nurses looking in the wrong location, patients having transferred to a different floor, and tubes not having arrived to station yet.

CONCLUSION: Among the most frequently missing and most expensive IV medications, the number of missing dose messages and re-dispenses were significantly lower after PharmTrac® implementation. A majority of missing doses that had to be redispensed was due to the nurses looking in the wrong location. Future efforts to decrease the number of missing doses and eliminate unnecessary costs include nursing re-education, refrigerated vs. non-refrigerated medications information posted inside medication rooms, and re-organization of the medication bins inside refrigerators.

PL XIII-19
STERILE COMPOUNDING ROBOT’S IMPACT ON SAFETY, EFFICIENCY, AND COST IN AN ONCOLOGY SATELLITE PHARMACY. Sunny B. Bhakta, A. Carmine Colavecchia, David Curlee, Alex C. Varkey, Daniel L. Metzen, Houston Methodist Hospital, Houston, TX.

BACKGROUND: The manual process of compounding and dispensing hazardous drugs poses an exposure risk to individuals. This risk remains despite the adoption of closed-system transfer devices and various environmental controls. The adoption of automated robotic compounding technology (ARCT) for compounding hazardous drugs provides an opportunity for hospital and health-systems to provide a safer method of preparation. The impact of ARCT on improved patient and employee safety, production capacity in lieu of the increasing oncology patient encounters, and oncology satellite operational costs are all areas of interest that are considered by hospital and health-systems prior to adoption of this advanced technology. The objective of this study is to assess the impact of ARCT on efficiency, cost, and safety in an oncology satellite pharmacy.

METHODS: This single-center, quasi-experimental study assessed ARCT’s impact on efficiency, cost, and safety from July 2016 to February 2017. The study timeframe consisted of a 3 month pre-implementation phase followed by a 2 month washout period and 3 month post-implmentation analysis phase. The efficiency of the ARCT was expressed in terms of preparation and validation time of select hazardous compounded agents pre-implementation and post-implementation of the ARCT. The primary endpoint assessed the changed in turnaround time for medications prepared by robotic technology compared to pre-implementation. Data for turnaround time was extracted from the hospital’s electronic medical record system. The impact on cost was described as a combination of pharmacist labor cost saved during final product verification and closed-system transfer device purchasing trends. Safety was evaluated in an abbreviated failure modes and effects analysis (FMEA) of the robot.

RESULTS: Expected results of the study include a time-segmented regression analysis on turnaround times for the selected drugs compounded by the ARCT, preliminary results demonstrated an improvement in overall turnaround time from verification to administration by 12 minutes (78.5 to 66.5 minutes post-intervention). The average ARCT preparation time was 9.1 minutes (range 8.0 to 12.1 minutes) for approximately 700 doses of 5 drugs. A recent FMEA conducted by a staff and management identified 36 unique failure modes involving 10 process steps, the risk priority number range for the steps ranged from 12 to 346 with an overall average of 199 (maximum score of 500). Cost savings directly associated with ARCT were approximated at $14,000 driven primarily by a reduction in closed-system transfer device costs.

CONCLUSION: Automated robotic compounding technology provides a safe and efficient method of hazardous drug preparation. Performing an FMEA on newly adopted technology systems can provide opportunities for improvement in technology utilization.

XIVA – GERIATRICS & TRANSITIONS OF CARE

PL XIV-1
EVALUATION OF FALL RISK IN ELDERLY PATIENTS TAKING ANTIHYPTERTENSIVE MEDICATIONS CONCOMITANT WITH OVERACTIVE BLADDER OR BENIGN PROSTATIC HYPERPLASIA MEDICATIONS. Pamela Ochoa, William Long, Jose Vega, Hendrick Medical Center/ Texas Tech University Health Science Center School of Pharmacy, Abilene Texas.

Purpose: Medications used to treat hypertension, benign prostatic hyperplasia or overactive bladder share similar side effects that may have an association with increased fall risk in the elderly population. The purpose of this study is to investigate the combined effect of medications used in the treatment of hypertension, benign prostatic hyperplasia (BPH) or overactive bladder (OAB) on the risk of falls that necessitate hospitalization.
Methods: This study has been submitted to the Institutional Review Board for approval. Electronic medical records will be used to identify patients over the age of sixty-five who have been admitted to the hospital for injuries due to a fall. Age, gender, body mass index, causative medications, dosage of medications being studied, average daily blood pressure, average daily heart rate, ambulatory status, diagnosis of fracture, and comorbidities will be recorded. Subjects will be grouped into three categories for comparison: patients prescribed antihypertensive and BPH or OAB medications, patients prescribed antihypertensive medications without medications for BPH or OAB, and patients prescribed medications for BPH or OAB without the use of antihypertensive medications. The three groups will be matched based on gender, age, and comorbidities. Fall rates among the three groups will then be analyzed as the primary endpoint. The secondary endpoint of the study will be fracture risk. Subgroup analyses will be used to evaluate the primary and secondary endpoints for groups on BPH medications compared to OAB medications with and without antihypertensive medications.

Results: Data collection is ongoing.

PL XIV-2 ASSESSMENT OF VITAMIN D DOSE AND ITS RELATION TO FALL RATES AND FALL-RELATED COMPLICATIONS. Brittany Johansen and Levi Campbell, VA North Texas Health Care System and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, Texas.

Purpose: The primary objective of this study is to assess differences in the frequency of fall rates and fall-related hip fractures between ergocalciferol 50,000 international units (IU) once a month compared to cholecalciferol 2,000 IU daily. The secondary objectives are to identify what percentage of patients with a baseline 25-hydroxyvitamin D (25(OH)D) level less than or equal to 20 ng/mL that experienced a fall and/or fracture and the percentage of patients on calcium plus vitamin D compared to no calcium on the frequency of fall rates and fall-related hip fractures.

Methods: This retrospective cohort study includes veterans greater than or equal to 50 years old taking ergocalciferol 50,000 IU once a month or cholecalciferol 2,000 IU daily and a documented baseline 25(OH)D level between January 1, 2003 to December 31, 2015. Patients were excluded if they had a past medical history significant for osteomalacia, hyperparathyroidism, primary biliary cirrhosis, malignancy with bone metastasis, cystic fibrosis, Crohn’s disease, bariatric surgery, and Parkinson’s disease. Baseline data collection includes: age, gender, race, vitamin D formulation and dose, calcium supplementation, baseline 25(OH)D level, first repeat 25(OH)D level, prior history of falls, prior history of hip fractures, and use of benzodiazepines, benzodiazepine receptor agonists/hypnotics, opioids, and skeletal muscle relaxants.

Results: Data collection and analysis currently in progress.

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

PL XIV-3 IMPACT OF PHARMACIST DRIVEN INTERVENTIONS ON 30-DAY READMISSION RATES AFTER CARDIAC CATHETERIZATION. Jeremy Chen, Ilka Ratsaphangthong. Methodist Dallas Medical Center, Dallas, TX.

Background: Acute myocardial infarction (AMI) is a primary contributor to hospital readmissions and increased healthcare costs. The Centers for Medicare and Medicaid Services (CMS) rewards hospitals with incentive payments for quality of care rather than quantity of services through Hospital Value-Based Purchasing. In 2012, CMS began reducing payments to hospitals with excess readmissions within 30 days of discharge from any hospital. Several studies have shown that multidisciplinary discharge counseling for AMI significantly reduced 30-day readmission rates, whereas nursing driven discharge counseling did not. Furthermore, clinical pharmacist involvement in discharge counseling has been shown in literature to significantly reduce 30-day all-cause readmission rates for heart failure patients. At Methodist Dallas Medical Center, nurses currently provide limited discharge counseling for AMI patients. A structured process including verbal counseling on AMI and secondary prevention medications does not exist. This research study focuses on implementation of formalized discharge counseling provided by pharmacists and pharmacy students for patients undergoing cardiac catheterization with intervention.

Purpose: Assess the effects of pharmacist driven discharge counseling on 30-day all-cause hospital readmission rates for post cardiac catheterization patients. Secondary objectives will assess the risk of readmission based on LACE scores, reasons for readmission, and median time to readmission.

Methods: This quasi-experimental study will compare 30-day readmission rates 4 months before versus 4 months after implementation of the pharmacist driven discharge counseling program. Included patients are identified using daily catheterization lab schedules and hospital generated STEMI/NSTEMI (ST-elevation myocardial infarction/Non-ST-elevation myocardial infarction) reports. Pharmacist discharge counseling will involve education on AMI disease state overview and secondary prevention medications (benefits, dosage instructions, side effects, interactions). Patient demographics, past medical history, risk factors, and AMI secondary prevention medications will be collected.

Results/conclusion: Data analysis is currently in progress and results are pending.
PL XIV-4

EFFECT OF A PHARMACIST-LED MEDICATION DISCHARGE EDUCATION PROGRAM ON THE 30-DAY READMISSION RATE OF INDIGENT PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFT OR VALVE REPLACEMENT SURGERY. Laura Carrell, Katie Ducote, Ryan Landry., Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

PURPOSE: To compare 30-day all cause readmission rates in indigent patients undergoing cardiac surgery who received discharge medication education versus patients who did not receive discharge medication education.

METHODS: This single center, retrospective chart review of patients admitted to Our Lady of the Lake Regional Medical Center from June 2016 to December 2016 compared the 30-day readmission rates for the 3 months prior to re-initiation of a discharge education program to the 3 months after. Patients were identified through the Society of Thoracic Surgeons (STS) database information collected by the hospital and subsequently stratified into two groups based on initial admission date. Inclusion criteria include self-pay and Medicaid patients undergoing coronary artery bypass graft or valve replacement surgery. All information was collected using the STS database and the hospital’s electronic health record. Information collected includes patient demographic information, relevant past medical history, payor status, type of surgery, date of admission, hospital readmission date and reason (if applicable), and discharge medication list. This study was approved by the Institutional Review Board of Our Lady of the Lake College.

RESULTS: A total of 47 patients meeting inclusion criteria were identified, 25 patients prior to re-initiation of the discharge education program and 22 patients after. There were 3 re-admissions in each group. Each group also had 2 patients who were discharged on inappropriate (non-guideline-directed) medications. The most common reason for readmission was atrial fibrillation, and the only drug-related re-admission was a patient on warfarin who was admitted for a nosebleed with normal INR. One patient was discharged on inappropriate medications and re-admitted within 30 days. This patient had heart failure with a reduced ejection fraction and was discharged without an angiotensin converting enzyme inhibitor or angiotensin receptor blocker. His re-admission was for altered mental status and appeared unrelated to this medication omission.

CONCLUSION: In the population of indigent patients undergoing cardiac surgery, a discharge education program did not appear to affect the rate of 30 day readmissions.

PL XIV-5

IMPLEMENTATION OF A POST-DISCHARGE, PHARMACIST-LED CLINIC FOR HEART FAILURE PATIENTS. Mackenzie Gabel, Amber Elliott, BSA Health System, Amarillo, TX.

PURPOSE: To outline the development and operation of a pharmacist-led, multidisciplinary heart failure program for patients recently discharged from a tertiary care center and evaluate the impact upon medication titration and 30-day readmission rates.

METHODS: A protocol-driven clinic staffed by a first-year pharmacy practice resident was implemented for patients recently discharged from a tertiary care center with the diagnosis of heart failure. Patients were referred by a cardiologist and followed by the pharmacy resident weekly for a total of 4 weeks as an addition to standards of care. Weekly visits were conducted over the telephone and consisted of medication reconciliation and education, review of home blood pressure and heart rate logs as well as daily weights, review of diet and physical activity, medication titration and adjustments, and medication compliance. Clinic visits and associated data collection began December 2016 through February 2017. Inclusion criteria were age ≥18 with a primary or secondary diagnosis of heart failure with reduced ejection fraction <40%. Exclusion criteria for enrollment in the clinic were age <18, pregnancy, and patients with heart failure with preserved ejection fraction. Data collected included basic demographics which encompassed baseline medications, NYHA class, percent ejection fraction, the percent of patients achieving target doses of medications, and hospitalizations 30 days post-discharge to our facility. Data were summarized using descriptive statistics, including frequencies and percentages.

RESULTS: At the time of abstract submission, only three patients have completed the four week clinic, with another three patients currently enrolled. Results are currently in progress. Of the three patients who completed the clinic, 0 were readmitted at 30-days for any cause. Additionally, all three patients were titrated to the target dose or maximally tolerated dose of their beta-blocker after four weeks.

CONCLUSION: Based on interim data of this single-center study, the benefit of a post-discharge, pharmacist-led heart failure clinic in reducing readmission rates and achieving target dose of evidence-based medications as compared to standards of care has yet to be elucidated.

PL XIV-6

DIFFERENCES IN OUTCOMES OF PHARMACIST-PROVIDED VERSUS TRAINEE-PROVIDED MEDICATION COUNSELING ON TRANSITIONS OF CARE IN PATIENTS IN THE CENTRAL TEXAS VETERANS HEALTHCARE SYSTEM. Erin R. Pilcher, Archana Banerjee, and Chelsey Roscoe, Central Texas Veterans Health Care System – Temple, TX.

PURPOSE: The objective of this audit is to review the local impact on transitions of care by pharmacist and trainee patient counseling on medication therapy.

METHODS: Retrospective chart reviews will be performed on all patients who had inpatient stays lasting greater than forty-eight hours on the med-surge telemetry floor and general medicine floors of the Olin E. Teague Veterans Hospital from July 1, 2015 to July 1, 2016. Patients who received medication counseling by a pharmacy professional will then be identified by Clinical Pharmacist Notes or Student Progress Notes in their electronic medical chart. Data from patients who received pharmacist counseling will be compared to patients who received resident or intern counseling. Outcomes will be compared between the two groups. The following data will be collected: age, gender, ethnicity, disease state related to chief complaint, number of medications prescribed or discontinued during hospitalization, name of medication counseled on, pharmacist or trainee counseled, number of medication discrepancies at follow-up, refill history 4-months post-discharge, readmissions for the same disease
state within 30 days due to medication non-compliance or medication errors, and time to readmission. All data will be recorded without patient identifying information and presented using descriptive statistics.

**RESULTS:** Results from this audit are still pending. Findings will be included in the final Audit report after all data has been gathered and analyzed.

**CONCLUSION:** Results from this audit are still pending. Once collected, the results of this audit may be considered for future implementation of programs locally that may utilize pharmacists or residents and clinical pharmacy technicians supervised by pharmacists to aide in transitions of care at the CTVHCS.

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**PL XIV-7**

**ASSESSMENT OF THE FEASIBILITY IN IMPLEMENTING A MAIL ORDER PRESCRIPTION SERVICE FOR AN INDIGENT PATIENT POPULATION WITHIN A COMMUNITY HEALTH SYSTEM.** LiChao Zhao, Leroy Perkins, Shawn Gautreaux, Harris Health System, Houston, TX.

**Purpose:** To assess the overall feasibility of providing mail order service within Harris Health System and consider potential benefits including patient satisfaction, medication compliance, and financial impact.

**Methods:** An electronic medical record was utilized to collect data and MyHealth enrollment information on patients who receive prescriptions at Harris Health System. Additionally, an electronic questionnaire was sent to patients to determine interest in mail order services and assess the accuracy of patient details. Principal components of the questionnaire included prescription pick-up, mail-order preference, delivery cost, customer satisfaction, medication adherence, and prescription refill method. The electronic questionnaire automatically compiled responses for all responders. Projected expenditures (automation, mailing providers) and return on investment (ROI) were developed and presented for administrative approval.

**Results:** 154,000 patients received the questionnaire and 6,873 responses (4.5%) were attained in the span of 2 weeks. All multiple choice questions resulted in a range of 50.30% to 83.18% on the answer “yes”. The only notable difference in response rate associated with prescription pick-up difficulty. (Number of individual answers: 6,867 vs. 4,199) The two additional free response questions at the end provided more insight on patient concerns, and the free-text responses were facilitated into categories: concerns for price of service (55%), concerns about mail process/time of arrival (23%), concerns with medication order/notifications (8%), and miscellaneous comments (14%).

**Conclusion:** Majority of the patients prefers the implementation of mail-order with a low or no cost association. The study determined the current need for a mail-order service within the health system and the necessary steps to improve patient satisfaction and care. Further prospective studies should be considered to assess true benefits after the mail-order prescription service is operational.

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**PL XIVB – PSYCHIATRY**

**PL XIV-8**

**IMPACT OF PHARMACIST COUNSELING ON PSYCHIATRIC READMISSION RATES AT A VA HOSPITAL.** Monica Mathys and Meghan Duquette, VA North Texas Health Care System and Texas Tech University Health Sciences Center School of Pharmacy, Dallas, Texas.

**PURPOSE:** The primary objective of this study is to investigate the impact of intensive medication counseling provided by pharmacists on 30 day and 60 day readmission rates to an acute inpatient psychiatric unit due to medication nonadherence compared to patients who did not receive pharmacist counseling. Secondary outcomes include the impact of pharmacist counseling on readmission rates due to medication nonadherence as well as assessing the impact of patient factors or characteristics on medication nonadherence and hospital readmission.

**METHODS:** A formalized, pharmacist-driven, discharge medication counseling program was initiated on the inpatient, acute mental health unit at the VA North Texas Health Care System in January 2017. To assess the impact of pharmacist counseling on readmission rates, all patients admitted to the unit for greater than 48 hours due to medication nonadherence and followed by an academic medical team that included a pharmacist, pharmacy resident, or pharmacy student were eligible for study participation. During pharmacist-driven counseling sessions, discharge medication lists and medication changes made during hospitalization are reviewed with the patient. Education is provided regarding indication, dosing instructions, adverse effects and side effect management. Medication adherence is emphasized. Study participants are followed prospectively up to 365 days post-discharge to assess psychiatric readmissions due to medication nonadherence. Relhospitalization rates are compared to a retrospective cohort of patients admitted prior to the initiation of the formalized counseling program.

**RESULTS:** Data collection and analysis currently in progress.

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

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**PL XIV-9**

**CELECOXIB, DICLOFENAC, ETODOLAC, NAPROXEN, AND OTHER MEDICATIONS IN ALZHEIMER’S DISEASE.** Danni McMahan and Rick Weideman, VA North Texas Health Care System, Dallas, TX.

**PURPOSE:** The primary objective of this study is to determine if the chronic scheduled use of celecoxib, diclofenac, etodolac, or naproxen is associated with a lower incidence of Alzheimer’s Disease (AD) at the Veterans’ Affairs North Texas Health Care System (VANTHCS). Secondary outcomes include comparisons of the rate of
progression of AD among the study nonsteroidal anti-inflammatory drugs (NSAIDs) as well as analyzing the effects of additional concomitant medications on the development of AD.

**METHODS:** Patients taking one of the four study NSAIDs between October 1998 and September 2016 were eligible for inclusion. Patients had to receive one of the four study NSAIDs for at least 360 days. Patients were considered to have developed AD if they received a prescription for either an acetylcholinesterase inhibitor or a NMDA receptor antagonist. Patients were excluded from the AD group if they had a diagnosis of Parkinson's Disease or if data in the electronic medical chart suggested a patient did not have a true diagnosis of AD. Data was retrospectively collected from the VANTHCS's electronic database to compare the incidence of the development of AD between those chronically taking celecoxib, diclofenac, etodolac, and naproxen. Additionally in those that developed AD we compared the rate of progression based on standardized screening scores of cognitive impairment (i.e. Mini-Mental Status Examination, Montreal Cognitive Assessment, Functional Assessment Staging) in the four separate groups.

**RESULTS:** Data collection and analysis is currently in progress.

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

**PL XIV-9**

**IMPACT OF PHARMD INTERVENTIONS TO INCREASE OPIOID OVERDOSE EDUCATION AND NALOXONE DISTRIBUTION PARTICIPATION IN A VA OUTPATIENT MENTAL HEALTH SETTING.**

Joy Brodrick, Terri Hahn, and Bo Hyung Song, VA North Texas Health Care System, Dallas, Texas.

**PURPOSE:** The primary objective of this study is to investigate the rate of naloxone prescribing in Mental Health (MH) Diamond Clinic 6 months prior to MH PharmD educational intervention compared to 6 months after MH PharmD intervention. Secondary outcomes are to determine the proportion of VISN17 priority panel or Stratification Tool for Opioid Risk Mitigation (STORM) high/very-high risk patients that was prescribed naloxone, to determine the rate of naloxone prescribing in MH Diamond Clinic versus the rates of naloxone prescribing in Veterans Affairs North Texas Health Care System (VAN THCS) MH clinics without PharmD presence during the same time period; to determine the rates of naloxone prescribing and opioid-related morbidity and mortality events for 2014, 2015, and 2016 at VAN THCS, and to assess the impact of PharmD intervention on opioid and benzodiazepine prescribing patterns.

**METHODS:** A formalized opioid overdose education and naloxone distribution (OEND) program with educational intervention by pharmacists in the MH Diamond Clinic was initiated in April 2016. Educational interventions included: implementation of education and training for prescribers, nurses, and patients; providing demo naloxone auto-injectors and patient education handouts to prescribers and nurses; offering 30-minute patient education groups for patients or one-on-one teaching; distributing to providers lists of patients identified as at-risk for overdose with upcoming appointments; and calling the same list of patients identified to be at-risk for overdose with upcoming appointments to offer participation in the OEND educational groups or discussion with primary care provider or MH provider for naloxone prescription. The intervention window was defined as April 1, 2016 to April 30, 2016. To assess the impact of PharmD educational intervention for both prescribers and patients, a retrospective single center observational cohort was conducted at VANTHCS. Only patients identified to be currently enrolled in MH Diamond Clinic were included. Patients were excluded if they either already had or were prescribed a naloxone kit by non-VA prescribers or a VA prescriber not practicing in MH Diamond Clinic. Patient data in regards to individual risks for overdose and outcomes were collected from the institution’s electronic records 6 months before the start (October 1, 2015) and 6 months after the end (October 31, 2016) of the PharmD educational intervention window.

**RESULTS:** Data collection and analysis is currently in progress.

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

**PL XIV-10**

**DOUBLE THE FUN: PSYCHIATRIC EXACERBATIONS IN VETERANS RECEIVING CONCOMITANT ORAL ANTIPSYCHOTICS AND LONG-ACTING INJECTABLE ANTIPSYCHOTICS.**

Diana L. Loffgren, Leah Rickert, Central Texas Veterans Health Care System, Temple, TX.

**PURPOSE:** To review the use of oral antipsychotic agents in conjunction with long-acting injectable (LAI) second generation antipsychotics (SGA) to determine if there is a disparity in psychiatric exacerbations between veterans receiving LAI SGA as monotherapy and those receiving both LAI SGA and oral antipsychotics.

**METHODS:** This project is a continuation of a previously conducted study and will involve a retrospective chart review at three outpatient mental health clinics within a Veterans healthcare system in the Southwestern United States. This project has been reviewed by the Central Texas Veterans Health Care System Institutional Review Board (IRB). This study will utilize the subject list identified by a previous study. Subject population will include subjects reviewed in the previous study as well as those who were identified as eligible for the previous study but not included in the initial chart review. Participants were defined as veterans receiving an outpatient prescription for a LAI SGA including risperidone, paliperidone palmitate, and aripiprazole between January 1, 2013 and August 31, 2015. Subjects were included if they received a LAI SGA as an outpatient for the treatment of schizophrenia or schizoaffective disorder. Subjects were excluded if they received a LAI SGA for an indication other than schizophrenia or schizoaffective disorder (such as bipolar disorder, or psychosis NOS) or received antipsychotic medications from non-designated facility while receiving LAI SGA therapy. Subjects are separated into two groups, those receiving LAI SGA monotherapy (LAI-only) and those receiving both LAI SGAs and oral antipsychotics (LAI+oral). A student t-test or Wilcoxon rank-sum will be used to compare the number inpatient psychiatric admissions between groups. Secondary outcomes will evaluate the number of emergency department (ED) visits and adverse drug effects (ADE).
related to antipsychotic medications. Chi-squared tests will be used to compare occurrence of ADEs and a student t-test or Wilcoxon rank-sum will be used to compare the number of ED visits. ADEs will be categorized as mild, moderate, or severe as defined in the Veterans Affairs Adverse Drug Event Reporting System (VA ADERS).

RESULTS: pending, data collection is on-going
CONCLUSION: pending
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