ALCALDE XXXIII

SOUTHWEST LEADERSHIP CONFERENCE
For Pharmacy Residents, Fellows & Preceptors

ABSTRACTS OF PLATFORM PRESENTATIONS
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IA – AMBULATORY CARE

PL 1-1
COMPARISON OF ANTICOAGULATION AGENTS FOR TREATMENT OF VENOUS THROMBOEMBOLISM IN CANCER PATIENTS. Ihe-atu Anachebe, Michelle Cefaretti, Tracie Eshelbrenner, Mandy Fisk, Claire Rodrigues JPS Health Network, Fort Worth, TX.

PURPOSE: To determine if there is a lower rate of recurrent thromboembolic or bleeding events with direct oral anticoagulants (DOACs) compared to enoxaparin or warfarin for patients with active cancer within a 6 month time frame.

METHODS: A retrospective chart review was conducted using electronic medical records. Patients with active cancer and new onset venous thromboembolism (VTE) with prescriptions for apixaban, rivaroxaban, warfarin, or enoxaparin were reviewed. The study time frame was between June 1, 2016 and March 31, 2018. The primary outcome of this study was the recurrence of any thromboembolic event within a 6 month time frame. Recurrent VTE was classified as distinguishable from the original thrombus by duplex ultrasound, venography, CT, or MRI as documented in the electronic medical record. The secondary outcome of this study was the incidence of clinically relevant major or non-major bleeding. Major bleeding was defined as documented overt bleeding plus one or more criteria as defined by the International Society on Thrombosis and Haemostasis (ISTH). Clinically relevant non-major bleeding was defined as documented overt bleeding that does not meet criteria for major bleeding but resulted in the need for medical intervention, unscheduled contact with a healthcare professional, or interruption/discontinuation of anticoagulation.

RESULTS/CONCLUSION: Research in progress

PL 1-2
IMPLEMENTATION OF A DIRECT ORAL ANTICOAGULANT KNOWLEDGE ASSESSMENT AND EDUCATION SERVICE. Brandi K. Dahl, Krystal K. Haase, Maegan M. Whitworth, Les P. Covington, Rodney B. Young, Eric J. MacLaughlin, Texas Tech University Health Sciences Center School of Pharmacy, Amarillo, TX.

PURPOSE: Anticoagulants, including direct oral anticoagulants (DOACs), are high-risk medications. However, education and follow-up requirements for patients receiving DOACs are not clearly defined nor consistently provided by pharmacists. The primary aim of this study is to assess levels of anticoagulation knowledge in patients prescribed a DOAC compared to those prescribed warfarin. Long-term patient knowledge will also be assessed three-months post-pharmacist intervention.

METHODS: This two-phase study is being conducted in a university-based family medicine clinic. For phase 1, patients were identified by query of electronic health records for anticoagulant prescriptions between January 2017 and December 2018. Active anticoagulant users were verified through manual chart review and categorized by DOAC versus warfarin use. Patient and regimen-specific characteristics were collected by manual chart review. Baseline understanding of prescribed anticoagulant use was evaluated by phone survey using a modified anticoagulation knowledge tool. Subsequently, targeted education was provided based on question response. Additionally, patients meeting criteria per protocol were scheduled for pharmacist in-clinic follow-up. Phase 2 will evaluate effectiveness of the intervention through repeat phone screening at 3 months post-intervention. Categorical variables were analyzed using chi-square or Fisher’s exact test. Continuous data were compared using the Student’s T-test or Paired T-test as appropriate.

RESULTS/CONCLUSION: A total of 387 patients were screened of which 213 (55.0%) met inclusion. Of those, 74 (34.7%) were taking warfarin, 81 (38.0%) apixaban, 55 (25.8%) rivaroxaban, and 3 (1.4%) dabigatran. Most patients (193, 90.6%) were prescribed an anticoagulant by providers outside the clinic. This study will provide valuable insight for the implementation of a comprehensive pharmacist-managed DOAC support service.

PL 1-3
ASSESSMENT OF VITAMIN B12 MONITORING IN VETERANS WITH TYPE 2 DIABETES ON METFORMIN THERAPY. Haley A. Runenberg, Ashley M. Higbea, Rick A. Weideman, Carlos A. Alvarez, VA North Texas Health Care System, Dallas, TX.

Purpose: To determine the impact of the American Diabetes Associations (ADA) Standards of Medical Care in Diabetes Guideline recommendation on vitamin B12 monitoring in a veteran population on long-term metformin therapy.

Background: Since 2017, the American Diabetes Association (ADA) Standards of Medical Care in Diabetes Guideline has included a recommendation for periodic B12 measurements in metformin treated patients, especially those with anemia or peripheral neuropathy. The compliance with this recommendation has yet to be determined.

Methods: Retrospective chart review was performed of veteran patients on metformin who started therapy prior to 2005 at the VA North Texas Health Care System (VANTHCS). The primary outcome compared Vitamin B12 monitoring in 2016, 2017, and 2018 for each patient. Secondary outcomes included determining the impact of metformin on vitamin B12 levels, and if patients are being supplemented accordingly. Patients without regular follow-up (defined as <1 A1c in 2015) and those not consistently prescribed metformin since therapy initiation (defined as proportion of days covered <80%) were excluded.

Results: pending

Conclusion: pending
**PL I-4**

**ASSOCIATION BETWEEN HIGH-INTENSITY STATIN ADHERENCE AND CHOLESTEROL REDUCTION IN VETERANS WITH CHRONIC KIDNEY DISEASE.** Wei K. Yuet, Meredith A. Sigler, Lisa M. Chastain, Texas Tech University Health Sciences Center School of Pharmacy/ VA North Texas Health Care System, Dallas, TX.

**PURPOSE:** To assess the impact of medication compliance in Veterans with chronic kidney disease receiving high-intensity statin medications at the VA North Texas Health Care System. Previous studies have associated higher rates of adherence to greater LDL-c reduction; however, the effects of adherence with high-intensity statins on LDL-c reduction and safety in patients with chronic kidney disease are limited.

**METHODS:** This retrospective cohort review collected data from the VA North Texas Health Care System electronic records. We evaluated the relationship between high-intensity statin adherence (≥80%) versus high-intensity statin nonadherence (< 80%) and LDL-c reduction in patients with CKD. We utilized unpaired t-tests to compare 12-month changes in LDL-c from baseline within the adherent and nonadherent groups and multiple linear regression to compare groups. The secondary outcome of the safety of statins in patients demonstrating adherence versus nonadherence on the basis of adverse events and liver enzyme abnormalities was assessed via Fisher’s exact test.

**RESULTS:** Research in progress.

**CONCLUSION:** Research in progress.

**PL I-5**

**INCREASING NALOXONE KNOWLEDGE AND USE THROUGH DIRECT-TO-PATIENT EDUCATION.** Kathryn Litten, Lucas G. Hill, Aida Garza, Maaya Srinivasa, Paloma Falcon, CommUnityCare Health Centers, Austin, TX.

**PURPOSE:** In the United States, opioid overdoses account for 115 deaths each day. Naloxone, a prescription opioid-antagonist, reverses opioid overdoses and prevents death. Barriers to naloxone use include limited education, access, and perceptions of provider judgement. This study was designed to assess the efficacy of mailed direct-to-consumer education regarding naloxone, with or without a live teaching seminar, to patients at risk for opioid overdose. By combining these two methods and empowering patients with treatment decisions, we hypothesized that mailing education would increase seminar attendance and naloxone access resulting in improved overdose-related knowledge and use.

**METHODS:** This is a multi-clinic, observational study in a system of federally qualified health centers. Patients with a current opioid prescription or ICD codes indicating current or past substance use disorder were identified in the electronic medical record. A phone survey was conducted to a sample of patients to assess knowledge, perception, and past use of naloxone. These patients were mailed a handout about the indication and use of naloxone, and an invitation to attend one of three live demonstration seminars to receive naloxone at no cost. Identical knowledge surveys were given immediately before and after the seminar. Three month post-surveys will be mailed to assess efficacy of naloxone training. Patient demographics and naloxone prescription data will be obtained through the EMR. The primary outcome is the overall score change from pre-survey to post-survey. Secondary outcomes include reported scores on each question, number of naloxone prescriptions distributed or prescriptions written, and number of overdose reversals at post survey.

**RESULTS:** One hundred and twenty patients were contacted (68 in the Rx group and 51 in the ICD group). Forty-eight phone surveys were collected from the Rx group and 12 from the ICD group. The average scores were 59% and 78% respectively. Less than 50% of patients responded correctly to 7 questions. All patients answered they would call an ambulance. Seminars have yet to be conducted and data will be analyzed upon study completion.

**CONCLUSION:** Results pending.

**IB – GERIATRIC PHARMACY / PALLIATIVE CARE & PAIN MANAGEMENT / AMBULATORY CARE**

**PL I-6**

**APPROPRIATENESS OF FLUOROQUINOLONE PRESCRIBING IN THE LONG-TERM CARE SETTING.** Shelby S. Anderson, Amie Taggart Blaszczyk, Ronald Hall, Texas Tech University Health Sciences Center School of Pharmacy, Dallas, TX.

**PURPOSE:** To characterize the dosing appropriateness of fluoroquinolone prescribing in the long-term care setting.

**METHODS:** This retrospective chart review included all fluoroquinolones prescribed in 19 long-term care facilities owned by a single for-profit long-term care company from September 1 to November 30, 2018. Dosing appropriateness was based on 3 different criteria - duration of use based on indication, appropriateness of dose based on indication, and appropriateness of dose based on renal function. We also sought to determine percentage of patients with a risk factor for a serious adverse event as noted in the warnings/precautions section of the package insert (age ≥60 years, concomitant QT-prolonging medications, and concomitant corticosteroids). Duration of therapy and appropriateness of dose used were assessed based on the drug package insert recommendation for that indication (if available). Appropriateness of dose used was also determined based on renal function. Renal function was calculated for each patient who did not have any missing values using the Cockcroft Gault equation. Drug interactions and culture/sensitivity reports were also reviewed.

**RESULTS:** There were 200 unique patients contributing to the 222 fluoroquinolone orders included. Levofloxacin was the most commonly used fluoroquinolone, making up 60% of all orders. The two most common indications for use were urinary tract infection and pneumonia. Thirty-eight percent of orders did not include an indication and 15% of orders met the 3 criteria for dosing appropriateness. Forty-seven percent of orders were unable to be assessed for appropriateness due to missing data, primarily missing serum creatinine and missing indication for use. Eighty-nine percent of orders were for patients who had 1 or more risk factors for a serious adverse event. Two of the 222 orders
PL 1-7

OPIOID OVERDOSE: PATIENTS’ KNOWLEDGE OF AND ABILITY TO MANAGE THE LIFE-THREATENING CRISIS.  Leslie M. Coons, Jessica Gardea, Annesha White, Shara Elrod, University of North Texas System College of Pharmacy Fort Worth, Texas.

PURPOSE: Increasing naloxone access for opioid users has become a nationwide initiative. Naloxone can be a lifesaving medication, yet it is essential that patients understand when and how to use it and can communicate this to others. Most information about people’s knowledge of opioid overdose management comes from populations of illicit drug users. Additionally, there is little data demonstrating the efficacy of overdose education provided by pharmacists. The purpose of this study is to determine patients’ baseline knowledge, immediate recall, and long-term retention of opioid overdose management after receiving education from pharmacy personnel in a pain and palliative care clinic.

METHODS: Patients deemed high risk for opioid overdose will be prescribed naloxone and receive overdose management education from a pharmacist during a clinic visit in Tarrant County, TX. Before the education, demographic data will be collected and patients will complete a 10-question assessment on opioid overdose. Six of the 10 questions evaluate patients’ knowledge on overdose risk factors and management. The remaining four questions also assess knowledge regarding overdose, but may provide insight into patients’ perception of and confidence to manage opioid overdose. Additionally, patients will be evaluated on their knowledge of the prescribed naloxone device. Patients will be taught how to use the device, and a checklist will be utilized to evaluate the patient’s understanding via teach-back. Following the encounter, patients will complete the 10-question assessment again to measure immediate knowledge retention of overdose management. At the patient’s next follow-up visit (within 1-3 months), patients will complete the assessment and perform teach-back to evaluate long-term knowledge retention. ANOVA will be used to analyze scores on the knowledge assessment, and a paired t-test will be utilized to analyze device checklist scores. Descriptive statistics will be used for secondary analysis of specific questions and steps on the device checklists.

RESULTS: Data collection in progress.

CONCLUSION: To be determined.

PL 1-8

COMPARISON OF THE BAZALIDAV SCALE TO THE MEDICATION POSSESSION RATIO.  Lindsay Thomas, DeWayne Davidson, Oralia Bazaldua, University Health System, San Antonio, TX.

PURPOSE: To assess the accuracy of the BazAliDav Adherence Scale by comparison to the Medication Possession Ratio (MPR).

METHODS: This prospective pilot study was conducted in a county health system between January and February 2019. Participants, who were between the ages of 18 and 89 years of age, taking a chronic medication for at least 90 days, saw a pharmacist or other provider at the health system’s clinics and filled their prescriptions at a health system’s outpatient pharmacy, were recruited to participate in the study. During a routine clinic visit, patients were consented and asked the BazAliDav Adherence Scale, a 0 to 10 patient self-rating scale developed and studied to help assess a patient’s perceived adherence to their medications. After the visit, investigators acquired the participant’s prescription fill history for 2018 to calculate the MPR each medication the patient is using to treat a chronic condition. The participant’s average MPR was calculated and used for the primary outcome. Once the data was collected, a preliminary exploratory data analysis using charts and descriptive statistics was performed to examine and identify trends of the data.

RESULTS: Forty-seven participants were asked the questionnaire, but only 40 participants qualified due to fill history. Of those 40, sixty-five percent (n=26) self-reported a 9 or greater on the BazAliDav scale. Eighty-eight percent (n=23) of participants self-reported a 9 or greater on the BazAliDav Adherence Scale had a calculated MPR of 80% or greater compared to 43% (n=6) of participants, who self-reported 8 or less (p=0.00701228). Linear regression was performed and found the R² was 0.0982 and the trend line equation was y=4.8336 + 40.476.

CONCLUSION: This pilot study comparing of the BazAliDav Adherence Scale to the MPR demonstrated if participants self-reported a 9 or greater on the BazAliDav Adherence Scale, they were more likely to have MPR of 80% or greater compared to the participants, who self-reported 8 or less. Further studies with larger populations are needed to truly determine the correlation of the BazAliDav scale and the participant’s medication adherence.

PL 1-9

UTILITY OF SUBSEQUANT MEDICARE ANNUAL WELLNESS VISITS.  Kelsie M. Fiss, Les Covington, Evelyn Sbar, Eric J. MacLaughlin, Texas Tech University Health Sciences Center Schools of Pharmacy and Medicine, Amarillo, TX.

PURPOSE: Preventative care services (PCS) improve quality of life and decrease long-term health care costs. In 2011, Medicare introduced the Annual Wellness Visit (AWV) which includes a health risk assessment and customized wellness or personal prevention plan. Medicare covers one initial AWV per beneficiary and subsequent visits on an annual basis. The value of the initial AWV has been studied, but there have been no studies to date looking at the utility of subsequent visits. The primary objective of this study is to evaluate the utility of subsequent Medicare AWVs by comparing total quantity and types of preventive
health recommendations at the initial AWV to those at subsequent visits. Secondary objectives will examine the differences in the number of individual preventative recommendations between the initial and subsequent AWVs. This information will be used to clarify best practices for preventative care and could potentially impact the recommended frequency of AWVs to ensure the most cost-effective care is provided.

METHODS: A retrospective chart review of patients who have completed the initial AWV and at least one subsequent AWV from January 1, 2011, to December 31, 2018, at the Texas Tech Department of Family and Community Medicine in Amarillo was conducted. The AWV encounters were identified by querying the billing records for G-codes assigned to the initial AWV (G0438) and subsequent AWVs (G0439). Patient demographics and preventative health recommendations made at the initial visit and subsequent visit were then collected.

RESULTS: Data collection and analysis currently in progress.

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

IIA – EMERGENCY MEDICINE

PL II-1
REVIEW OF LOW-DOSE KETAMINE FOR PAIN IN THE EMERGENCY DEPARTMENT AND IMPACT ON OPIOID PRESCRIBING. Jacob Burnett, Craig Cocchio. CHRISTUS Trinity Mother Frances Hospital, Tyler, TX.

PURPOSE: It is believed that opioid dependence can begin through an initial exposure to a physician-prescribed opioid. Although short courses of opioids are inadequate to cause dependence or addiction, exposure from the emergency department (ED) may be a contributory step in the process. Numerous studies have evaluated the use of low-dose ketamine for the treatment of pain in the ED, but limited data exists regarding its impact on discharge opioid prescribing. This study sought to evaluate the impact of low-dose ketamine on opioid administration and discharge opioid prescriptions.

METHODS: This study was a retrospective, single center, observational study of adult patients who received low-dose ketamine in the ED for the treatment of acute pain. A post-hoc analysis was performed comparing patients who were discharged from the ED versus patients who were admitted. The primary endpoint was the number of patients receiving a discharge opioid prescription. Secondary endpoints included the length of the discharge opioid prescription, the number of patients receiving an opioid following the administration of ketamine, and the amount of opioids administered in the ED.

RESULTS: A total of 80 patients (41 in the discharged group and 39 in the admitted group) were included in this study. The percentage of patients who received a discharge opioid prescription was 26.8% versus 48.7% (p=0.043) for the discharged group and the admitted group, respectively. The median duration of opioid prescription length was shorter for the discharged group compared to the admitted group (3.3 days vs 5.0 days, p=0.032). Patients in the discharged group were less likely to receive an opioid after administration of ketamine (34.1% vs 61.5%, p=0.014) and received fewer opioids in the ED (6.7 morphine equivalents vs 10.0 morphine equivalents, p=0.012) compared to the admitted group.

CONCLUSION: In patients who received low-dose ketamine for acute pain in the ED, those who were discharged were less likely to receive a discharge opioid prescription and opioids after ketamine, received a shorter duration prescription, and received fewer opioids in the ED compared to patients who were admitted.

PL II-2
INTRAVENOUS PUSH ANTIBIOTICS IN THE EMERGENCY DEPARTMENT. Nicole A. Correll, Craig Cocchio, CHRISTUS Mother Frances Hospital, Tyler, TX.

PURPOSE: Current guidelines recommend antibiotics within one hour of arrival to emergency department. Centers for Medicare and Medicaid implemented a bundle of actions, including antibiotics, required within three hours after diagnosis of sepsis or septic shock. If this is not met within the time period, it could be detrimental to patient and hospital. Recently, hurricanes caused issues with manufacturing and distribution of medications and related supplies. This created a shortage of small-volume intravenous fluids impacting the supply of intravenous antimicrobials.

METHODS: This will be a retrospective, single center, observational study that will include the review of computerized patient records. Patients in the emergency department being treated for sepsis who received cefepime, ceftriaxone, cefuroxime, meropenem, or aztreonam will be included. Comparison groups include patients who received antibiotics prior to intravenous push initiation between July and December 2017 and patients who received antibiotics after intravenous push initiation between March and August 2018.

The objective of this study is to demonstrate that the implementation of an intravenous push antibiotic protocol would improve time from provider order to administration for all emergency department patients who were diagnosed with sepsis. The primary endpoint is time from physician order to administration to patient.

RESULTS: Pending.

CONCLUSION: Pending.

PL II-3
PATIENTS AT INCREASED RISK OF OPIOID OVERDOSE IN A COMMUNITY PHARMACY. Bethannie D. Dziuk, Chinwendu O. Amushie, Charles F. Seifert, Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

PURPOSE: To determine the percent of patients at an increased risk of opioid overdose and to evaluate the dispensing of naloxone in the community pharmacy setting.

METHODS: A multi-centered retrospective chart review was conducted from October 31, 2018 to January 31, 2019. The study sites include Texas Tech University Health Sciences Center (TTUHSC) Pharmacy in Lubbock and Amarillo, Texas and United Supermarkets, LLC, pharmacies in the Lubbock region. Adult patients with an opioid prescription were identified. Once identified, the following data was collected and recorded: the name of the opioid
prescribed, the amount of morphine milligram equivalents (MME) per day, if a concurrent benzodiazepine was present, and if naloxone was dispensed. Additional standard demographic information, such as age and sex, were also obtained.

RESULTS: A preliminary analysis of 60 patients from the TTUHSC Pharmacy was performed. Patients were predominantly male (56.7%) with an average age of 54 years of age. Of the patients, 20.5% were determined to be at an increased risk of opioid overdose based on MME alone: 20% \( \geq 50 \text{ MME} \) and 0.5% \( \geq 100 \text{ MME} \). Furthermore, 5 out of 60 patients (8.3%) had a concurrent prescription for a benzodiazepine. Overall, 16 of the 60 (26.6%) of patients were determined to at an increased risk of opioid overdose. Of these 16 patients, 0% of patients had a prescription written for naloxone. Additionally, data from the pharmacies within United Supermarkets, LLC, is currently in the data collection phase and pending statistical analysis.

CONCLUSION: Data collection remains in progress, however, preliminary data suggests there is a considerable amount of patients that are at increased risk of opioid overdose within the community and meet criteria to be prescribed naloxone.

PL II-4
IMPACT OF FIXED-DOSE ETOMIDATE AND SUCCINYLCHOLINE PRESCRIBING ON SUCCESSFUL RAPID SEQUENCE INTUBATION IN THE EMERGENCY DEPARTMENT. John Witucki, Jan Ramos, Medical Center Hospital, Odessa TX.

PURPOSE: To determine whether a fixed-dosing strategy for rapid sequence intubation produces adequate intubating conditions, compared to standard, weight-based dosing.

METHODS: Using data retrospectively collected from the institution’s electronic records, we examined outcomes associated with patients prescribed either traditional weight-based doses or fixed doses of etomidate and succinylcholine.

RESULTS: A total of 213 patients were analyzed using historical records obtained from emergency department visits taking place between April 1, 2017 and September 26, 2018. Of these, 122 patients were excluded and 91 patients were analyzed further. Of those patients that met inclusion criteria, 46 received a fixed dose of etomidate 20 mg and succinylcholine 100 mg, while 45 patients received standard, weight-based dosing. There were no clinically significant differences in any primary or secondary outcomes. For the primary outcome, none of the included patients had EMR-documented RSI complications. Patients receiving fixed-doses of etomidate and succinylcholine had slightly shorter lengths of mechanical ventilation (3.9 days [IQR 2.0 days to 5.3 days] vs. 3.3 days [1.0 days to 3.0 days]), ICU length of stay (3.9 days [2.0 days to 5.3 days] vs. 4.6 days [1.3 days to 6.0 days]), and hospital length of stay (6.9 days [3.8 days to 7.3 days] vs. 9.1 days [2.3 days to 12.8 days]).

CONCLUSION: Utilization of fixed doses of etomidate and succinylcholine for the purposes of rapid sequence intubation is non-inferior to traditional, weight-based dosing and may decrease the risk of dosing and administration errors during this time-sensitive procedure.

PL II-5

PURPOSE: To investigate the sustained rate control success of diltiazem and metoprolol up to 3 hours in emergency department (ED) patients with atrial fibrillation with rapid ventricular rate (RVR). Studies have shown similar rate control efficacy between diltiazem and metoprolol at 30 minutes with select evidence showing improved early effectiveness (5-10 minutes) with diltiazem use. However, studies have not investigated rate control at times greater than 30-60 minutes which is important for maintenance of atrial fibrillation.

METHODS: This study was a retrospective chart review of patients with atrial fibrillation with RVR in the ED at University Hospital from January 1, 2016 through November 1, 2018. Patients were identified through ICD9 and ICD10 codes for atrial fibrillation with RVR which were then cross-referenced with billing data for diltiazem and metoprolol. A random sample of 100 patients from each drug were screened for inclusion. The primary outcome was sustained rate control defined as heart rate < 100 bpm without a need for rescue dose of rate control agent within 3 hours of initial heart rate control. Secondary outcomes included time to rate control, time to oral dose, admission rates, and safety outcomes.

RESULTS: After screening 573 visits, 300 patients were identified as receiving metoprolol or diltiazem in the ED. Two hundred patients were randomly screened with 51 patients meeting inclusion criteria (diltiazem n = 32, metoprolol n = 19). The most common reason for exclusion was lack of rate control at 30 minutes. There was no difference found in the primary outcome with 28 patients in the diltiazem group (88%) vs 15 patients in the metoprolol group (79%) achieving rate control, p = 0.45. Time to rate control was significantly shorter in the diltiazem group compared to the metoprolol group (15 minutes vs 30 minutes, respectively, p = 0.04). No difference in median time to oral dose was found (diltiazem 168 minutes vs. metoprolol 80 minutes, p = 0.33). More patients in the diltiazem group were admitted than in the metoprolol group (90.6% vs 57.9%, respectively, p = 0.01). Hypotension occurred more frequently in the metoprolol group (diltiazem 3.1% vs metoprolol 10.5%, p = 0.54) while bradycardia occurred more commonly in the diltiazem group (diltiazem 15.6% vs metoprolol 10.5%, p = 0.70); however, neither finding reached statistical significance.

CONCLUSIONS: Choice of rate control agent did not significantly influence sustained rate control success in this study. Diltiazem showed improved initial rate control over metoprolol without a difference in 3-hour control. Safety outcomes did not differ between treatment groups. This study aligns with previous studies that show diltiazem leads to shorter time to rate control; however, the duration of control should continue to be investigated as it appears to be similar between agents.
IIB – TRANSITIONS OF CARE

PL II-6
READMISSION OUTCOMES OF SLIDING SCALE INSULIN COMPARED TO BASAL-BOLUS INSULIN PRESCRIBED AT DISCHARGE IN AN INSULIN-NAIVE AND INDIGENT PATIENT POPULATION. Pamela Carter, Tracie Eshelbrenner, Lauren Kirk, Mandy Fisk, Claire Rodrigues, JPS Health Network, Fort Worth, TX.

PURPOSE: To evaluate hospital readmission outcomes in patients who are insulin naïve with type 2 diabetes mellitus who are initiated on either sliding scale or basal-bolus insulin at discharge.

METHODS: This was an observational, retrospective chart review of patients from January 2015 to July 2018. Adult patients were included if they had a history of type 2 diabetes mellitus, were insulin naïve, had a hemoglobin A1c ≥ 10% and were discharged from inpatient or observation units with a prescription for sliding scale or basal-bolus insulin. Sliding scale insulin was defined as containing a rapid acting insulin with directions that had a range for the dose of units. Basal-bolus insulin was defined as containing a rapid acting insulin with a fixed dose of units. Both regimens contained a long acting insulin with a fixed dose of units. The primary objective measured all-cause 30-day readmissions. The secondary objective measured diabetic related 30-day readmissions defined as hypoglycemia, diabetic ketoacidosis, hyperosmolar hyperglycemic state or hyperglycemia. The other secondary objective measured change in hemoglobin A1c after 3 months of initial hospital admission. Data was analyzed using descriptive statistics, chi-square test, paired sample t-test and logistic regression.

RESULTS: Statistical analysis pending.

CONCLUSION: To be determined.

PL II-7 - OPEN

PL II-8
EVALUATING THE EFFICACY OF MOTIVATIONAL INTERVIEWING ON ENHANCING MEDICATION ADHERENCE FOR HEART FAILURE PATIENTS AT AN ACADEMIC HEALTH SYSTEM. Elizabeth Villanueva, Matt Wanat, Susan Abughosh, Denisse Carbajal, Oliver Egwim Harris Health System, Houston, TX.

PURPOSE: Heart disease is one of the leading causes of death in the United States. Heart disease encompasses several heart related disorders, one of which is heart failure. The Harris Health System hospital average for heart failure readmission rate is 22.9%, which is comparable to the national average of 22%. Medication non-adherence is a contributing factor for readmission rates. Motivational interviewing is a technique which can be used to help combat some of the challenges our patients face with medication adherence and empower the patient to change their behavior and improve their health. This study will evaluate the efficacy of motivational interviewing on the improvement of medication adherence for heart failure patients.

METHODS: This is a single center pilot study evaluating the use of motivational interviewing on medication adherence for patients admitted due to heart failure. This study utilized trained pharmacy students to provide heart failure education using motivational interviewing techniques on patients admitted with heart failure from October 2018 to February 2019. An IT report was used to identify our control group which consisted of patients that have been educated by a pharmacist using the teach back method between October 2017 to February 2018. Post discharge, we retrospectively reviewed patient’s charts to determine if the patient picked up their medication within 48 hours, attended their follow up hospital visit and if they were readmitted back to the hospital within 30 days. To retain power, we determined that we needed to evaluate a total of 188 patients, 94 per arm, to provide a power of 80% at a type I error rate of 0.05 to detect a difference of 20% between the motivational interviewing group and the teach back method group. Our primary outcome was the percentage of patients that picked up their medications within 48 hours after discharge in the motivational interviewing group compared to the teach back method. Our secondary endpoints are 30-day hospital readmission as well as the percentage of attendance to hospital follow up visit.

RESULTS: There were a total of 197 charts that we reviewed of which 99 patients were educated using the teach back method and 98 patients were educated using motivational interviewing. Overall, 111 patients met the inclusion criteria, with 52 patients in the teach back method group and 59 patients in the motivational interviewing group. The number of patients that picked up their medication within 48 hours post discharge was 24 (46%) and 37 (63%) in the teach back method and motivational interviewing group respectively, with a p-value of 0.08.

CONCLUSIONS: This study found that use of motivational interviewing showed a 17% increase the percentage of patients that pick up their medications within 48 hours post discharge. This trend did not reach statistical significance possibly due to the small sample size and future studies in larger samples are warranted. Additionally, research to identify the best structure for training in motivational interviewing may result in better application and use of techniques which could result in better identification of barriers to medication non-adherence and enhance intervention effectiveness.

PL II-9
CLINICAL AND ECONOMIC IMPACT OF A PHARMACIST-INITIATED INTERPROFESSIONAL TRANSITIONAL CARE MANAGEMENT SERVICE FOR MEDICARE BENEFICIARIES IN AN AMBULATORY CARE CLINIC. Lan Ly, Shara Elrod, University of North Texas System College of Pharmacy, Fort Worth, TX.

PURPOSE: Older adults often have higher rates of hospital readmissions making it essential to facilitate a coordinated transfer of care between settings after hospital discharge. Transitional care management services have been shown to reduce mortality and total Medicare costs in older adults. However, the pharmacists’ role in the submission and generation of revenue for transitional care management services is unknown. The objective of this study is to evaluate the clinical and economic impact of a pharmacist-initiated interprofessional transitional care management
service in an ambulatory care clinic for patients 65 years and older after hospital discharge.

METHODS: A prospective, observational, single-center, pilot study will be conducted at the University of North Texas Health Science Center (UNTHSC) Center for Geriatrics where patients 65 years and older currently receiving care at UNTHSC who have been discharged from a hospital to home will be enrolled into the study. Patients will be referred to the pharmacy-initiated interprofessional transitions of care program, and enrolled if the clinic is notified within two days of hospital discharge. The interprofessional healthcare team includes a pharmacist, medical providers, physical therapist, and social worker. Data collection will include demographics, previous hospitalizations within one year, drug interventions, comorbidities, and any revenue generated from the program. Clinical measures will include changes in hospitalizations before and after program implementation, drug therapy problems, and use of high risk medications. Pharmacists will screen patients for study entry, perform medication reconciliation, review discharge plans, and provide education to patients enrolled in the program. Specific criteria for referral to chronic care management, social services, physical therapy, and home visits will be based on a predetermined protocol. The interprofessional team will meet monthly to review patient cases for process improvement. A paired t-test and descriptive statistics will be utilized for data analysis.

RESULTS: N/A

CONCLUSION: N/A

III A – PHARMACOECONOMICS & OUTCOMES RESEARCH / HEALTH-SYSTEM PHARMACY ADMINISTRATION & MANAGEMENT

PL III-1
SOLVING THE FLU EPIDEMIC: PHARMACIST-ADMINISTERED INFLUENZA VACCINE IN A HEALTH SYSTEMS SETTING. Chinyendu Amusie, Staci Moss, William Beathard, Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

PURPOSE: The influenza virus is a highly contagious respiratory illness that infected more than 48.8 million people during 2017-2018 and contributed to more than $3.2 billion in direct medical costs. Only 32.7% of adults were vaccinated against the flu during the last season, a 6.2% decrease from the previous season. With the prevalence of the influenza virus, pharmacists are still an underutilized resource in receiving the flu vaccine. In order to save the institution tens of thousands of dollars, the Texas Tech Health Sciences Center (TTUHSC) School of Medicine decided to offset the cost of providing vaccinations to direct patient care employees by utilizing the pharmacist at the TTUHSC pharmacy to run pharmacy driven flu clinics across all TTUHSC associated clinics. The aim of this project was to improve the influenza vaccination rates of TTUHSC associated direct patient care employees in addition to designing and implementing multiple interventions designed to 1- improve and streamline the process, 2- improve communication to employees, and 3- improve program management in regards to the number of vaccines to order and distributing the patients in a timely manner.

METHODS: This project was a retrospective data review utilizing TTUHSC pharmacy records, employee health records and power chart to analyze data regarding direct patient care employees. We compared the vaccination rates from the 2017-2018 flu season utilizing nurse run immunization clinics to the 2018-2019 flu season utilizing pharmacist run immunization clinics. The data was compiled to determine areas for improvement for the next immunization year utilizing pharmacist run immunization clinics.

RESULTS: There was a total of 1005 direct patient care employees in the TTUHSC Lubbock system, of the 1005 employees 962 received flu vaccinations and 19 did not receive flu vaccinations for various reasons. Approximately 67% of the 962 employees received their vaccinations during the pharmacists run clinics. The vaccination rate for both years remained the same at 96% with all groups meeting or exceeding the 90% Joint Commission goal. The institution saved a total of $26,558.78.

CONCLUSION: Although the vaccination rates remained the same for both vaccination seasons, the utilization of pharmacists run flu clinics is a cost saving technique that can be utilized by institutions. By employing certain quality improvement techniques, pharmacist run flu clinics can be utilized by any institution to vaccinate its employees and save money for the institution.

PL III-2
EVALUATING OUTPATIENT PHARMACY REFILL PRACTICE WHEN PROVIDERS CHANGE INSULIN DOSAGE: AN OPPORTUNITY FOR COST-SAVINGS. Chelsey Roscoe, Chantal Weiss, Amy Braun, Nathan Fewel, Central Texas Veterans Health Care System, Temple, TX.

PURPOSE: To determine if automatic refill after insulin adjustment costs Central Texas Veterans Health Care System (CTVHCS) significantly more money and if there is an opportunity for cost savings. After analysis, will identify intervention(s) to improve current refill practice.

METHODS: A report generated using the VISN 17 DataMart Outpatient Prescribed Therapy Tool to screen for veterans with a prescription for an injectable insulin who received an insulin dose adjustment at CTVHCS from September 2017 to September 2018. Chart review was performed in reverse chronological order until desired sample size of 25 Veterans per group had been met. Included outpatient insulin prescriptions for following products with dose adjustment between study time frame: NovoLog® (insulin aspart) vial, Lantus® (insulin glargine) vial, Levemir® (insulin detemir) vial, NovoLog® FlexPen® (insulin aspart). Specific insulin costs for facility were obtained from VISTA Drug Lookup. Activity logs from VISTA and CPRS chart will be reviewed to determine if providers utilized a method to opt out of automatic refills. Cost per refill per Veteran will be reviewed and then multiplied by calculated MPR to determine the extra cost incurred by the automatic refills. Cost found for primary outcome will be extrapolated to year time frame (September 2017 to September 2018) using total number of Veterans in study time period. Descriptive statistics will be utilized for all primary and secondary outcomes.
FINDINGS: The goal of this project is to determine if the automatic refill and insulin adjustment process currently in place incurs increased cost to CTVHCS. Results of this project will be reviewed to determine the best method to improve the current process. Findings will be included in the final Quality Improvement report after all data has been gathered and analyzed.

PL III-3
DOES SUGAMMADEX REDUCE PACU LENGTH OF STAY IN PATIENTS UNDERGOING ORTHOPEDIC SURGERY? Allison L Dietert, Karen M Costiloe, James R Tyler, CHRISTUS Trinity Mother Frances Hospital, Tyler, Texas.

Background: Reversal of neuromuscular blockade (NMB) has traditionally been accomplished with neostigmine, but since its approval by the FDA in 2015, the use of sugammadex has risen dramatically. Ample data support the use of sugammadex to reduce time from administration to a train of four (TOF) ratio <0.9 compared to neostigmine. Fewer studies have examined sugammadex’s impact on the time spent in the post-anesthesia care unit (PACU), and the data is conflicting.

Objective: To evaluate the impact of sugammadex versus neostigmine on PACU length of stay in patients undergoing orthopedic surgery

Methods: A retrospective cohort analysis of patients undergoing orthopedic surgery was conducted at a community hospital. The historical group consisted of patients receiving neostigmine in the six months prior to the addition of sugammadex to the OR automated dispensing system. Patients were chosen for the sugammadex group after it was available in each OR room. Primary endpoint was duration of PACU stay. Secondary endpoints included duration of emergence time, defined as surgery end time to anesthesia end time, and rates of PACU re-intubation.

Results: 976 neostigmine cases and 60 sugammadex cases met inclusion criteria and a convenience sample of 60 neostigmine and 60 sugammadex cases was selected. Patient demographics were similar between groups. PACU time was not significantly different between neostigmine and sugammadex (81.7 min; 75.2 min, p=0.18), nor was emergence time (12.5 min; 14.4 min, p=0.08). No PACU re-intubations occurred in either group.

Conclusion: Though sugammadex may provide a faster NMB reversal, it does not appear to reduce the amount of time spent in PACU compared to neostigmine in orthopedic surgery patients. Considering the high drug costs associated with sugammadex, its use may not be preferred in this patient population.

PL III-4
EVALUATION OF OPERATIONAL EFFICIENCIES IN BATCH PRODUCTION. Sarah E. Redmond, Josephine Hurtado, Geemon Mathen, Julianna Fernandez, Jeffrey Sherer, Texas Children’s Hospital, Houston, TX.

PURPOSE: It is well published that more frequent batch production leads to less waste however the optimal batch production and delivery schedule for a pediatric institution is unknown. Pediatric institutions are left to make individualized decisions and often create complex medication delivery systems with the goal of reducing drug waste by increasing batch frequency. The purpose of this project is to evaluate operational efficiencies at six points in time, taking into account different batch production and delivery schedules.

METHODS: This is a retrospective, single arm study that compared operational efficiencies and waste at six points in time with different batch production and delivery schedules. All doses produced via the central pharmacy batch printed in January 2011, August 2011, January 2014, August 2014, January 2018, and August 2018 were identified from the electronic medical record. Doses that were printed yet not administered were identified. The percent waste and total cost of waste was calculated. Production and delivery time was calculated based on the batch production and technician workflow schedule at each respective time. Using current technician average salary, cost of delivery time was calculated. Once the above data was obtained, the percent waste, cost of waste, cost of production time, and cost of delivery time in January and August of 2011, 2014, and 2018 was compared to evaluate each batch schedule for operational efficiencies.

RESULTS: To be presented

CONCLUSION: To be presented

PL III-5 - OPEN

IIIB – MEDICATION-USE SAFETY, PHARMACY SYSTEMS & OPERATIONS / PHARMACOECONOMICS & OUTCOMES RESEARCH

PL III-6
HIGH-RISK FALL MEDICATION ADMINISTRATION IN RELATION TO TIME OF FALL EVENT IN AN INPATIENT HOSPITAL SETTING. Lyndsay Cole, Jason Trahan, Tamra Acierni, Baylor Scott & White Health, Dallas, TX.

PURPOSE: Preventing patient falls in hospitals is a difficult and complex process. Patient falls can lead to patient harm resulting in reduced quality of life, increased length of stay, and healthcare cost. Preventing falls involves several factors such as managing a patients’ underlying fall risk factors, including high fall risk medications. A patient at any age can be at risk for falls due to various physiological changes that can leave them weak or confused. The main objective of this study is to examine if a time relationship exists for the highest fall potential for patients receiving high fall-risk medications.

METHODS: This study is a randomized, multi-center, retrospective, chart review of patients with a reported a fall event in an inpatient setting at 12 hospital facilities across North and Central Texas between April 1, 2018 to June 30, 2018. MIDAS database was used to identify patient fall events, which is mandatory for nursing to report after each event. Electronic Health Records (EHRs) were utilized to collect data, including diagnosis, medications and additional fall notes for patients experiencing a fall event. BSWH uses a modified John Hopkins Fall Risk Assessment Tool (JHFRAKT) to assess risk for falls during inpatient hospitalizations. A representative from BSWH inputs information regarding each fall event, including whether the
fall was witnessed, a summary of the event, medications that may have been associated with the event, the intervention and outcome of the reported fall. During each admission, patients are assessed for high fall risk medication administration. Medications considered high risk for contributing to falls were assessed within 5 half-lives (t1/2) from time of administration to the reported fall time. Patients with at least one fall event in an inpatient setting who had a fall risk assessment with a modified John Hopkins Fall Risk Assessment Tool were included in the study. Primary outcome includes patient average time between the administration of the high-risk fall medication(s) and the fall reported event. For randomization, facilities with greater than 10 falls were included in the study and 10 patients from those facilities were randomly selected to be included in the study. Secondary outcomes to include identification of medications most frequently involved with fall events.

RESULTS: Data collection pending.

PL III-7
EFFECT OF THERAPEUTIC INTERCHANGE ON MEDICATION CHANGES BETWEEN ADMISSION AND DISCHARGE. Ryan A. Popp, Kathleen A. Lusk, Shelley S. Glaess, Donna Burkett, Rebecca L. Attridge. University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX.

PURPOSE: Therapeutic interchange (TI) is the dispensing of an alternative medication within the same class as the original medication. TI often occurs in hospitals; however, failure to return patients to their original medications can increase the risk of adverse effects following hospital discharge. The purpose of this study was to evaluate the relationship between TI and discharge medication changes, hospital readmission rates, and emergency department visit rates following hospital discharge.

METHODS: Patient demographic and medication data were collected retrospectively for patients admitted to a nonprofit acute care hospital. The primary outcome was the relationship between TI and the rate of discharge medication changes. Secondary outcomes included types of discharge medication changes and the relationship between TI and both hospital readmissions and emergency department visits following hospital discharge.

RESULTS: 497 patients accounting for 1,072 medications were included. 21.2% of home medications were interchanged following admission, and 21.8% of home medications were changed at discharge. TI increased the incidence of discharge medication changes by 70% (OR 1.70, 95% CI 1.22–2.37, p=0.0021). Cardiovascular agents were most likely to be changed at discharge (26%) and gastrointestinal agents were most likely to be interchanged (65%). Psychotropic agents were least likely to be changed at discharge (12%) or interchanged (7%). Neither TI nor medication changes were predictive of 30-, 60-, or 90-day hospital readmission or emergency department visits following discharge.

CONCLUSION: This study was the first to examine the effects of TI on post-discharge outcomes. Despite being associated with an increased rate of discharge medication changes, the presence of TI did not correlate with hospital readmission or emergency department visit rates. This study supports the safety of TI.

PL III-8
EVALUATION OF DEMOGRAPHIC AND CLINICAL PROFILES AND CARDIOVASCULAR OUTCOMES IN PATIENTS WITH TYPE 2 DIABETES NEWLY INITIATED ON SODIUM-GLUCOSE COTRANSPORTER-2 INHIBITORS, GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONISTS, AND OTHER GLUCOSE LOWERING MEDICATIONS. Elmor D. Pineda, I-Chia Liao, Paul J. Godley, Karen Rascatt, Baylor Scott & White Health, Temple, TX.

PURPOSE: To compare demographic and clinical profiles and cardiovascular outcomes of patients with type 2 diabetes (T2D) who are new users of sodium-glucose cotransporter-2 inhibitors (SGLT-2i), glucagon-like peptide-1 receptor agonists (GLP-1RA), or other glucose-lowering medications (GLM)

METHODS: This is a retrospective observational cohort study that combined administrative claims and electronic health record data from an integrated delivery network in Texas. Patients aged 18 years or older with T2D with at least 1 prescription claim for either a SGLT-2i, GLP-1RA, or other GLM filled between the dates of March 1, 2013 through December 31, 2018 (index period). The index date is defined as the earliest prescription fill date for either a SGLT-2i, GLP-1RA, or GLM identified during the index period. Patients with prescription claims for their index drug class during the preceding 12-months prior to index date (baseline) were excluded. Patients were followed using an on-treatment approach. Primary outcome was a composite of myocardial infarction (MI), stroke, transient ischemic attack (TIA), unstable angina, and coronary revascularization. Secondary outcomes include heart failure hospitalization and individual components of the primary composite endpoints. Descriptive statistics were used to describe and compare baseline characteristics across all treatment groups. Propensity scores and inverse probability weighting (IPW) adjustment were used to balance baseline covariates between treatment groups. Covariate and IPW adjusted cox proportional hazard models were used to evaluate the risk of cardiovascular events.

RESULTS: A total of 7,581 patients met inclusion criteria for the study; 997 SGLT-2i, 886 GLP-1RA, and 5,698 GLM. Use of SGLT-2i versus GLM was associated with lower rates of cardiovascular events (HR, 0.68; 95% CI, 0.57–0.82; p<0.001). Use of GLP0-1RA versus GLM was also associated with lower rates of cardiovascular events (HR, 0.82; 95% CI, 0.68–0.99; p=0.0399). However, there was no significant difference in rates of cardiovascular events in SGLT-2i compared to GLP-1RAs (HR, 0.85; 95% CI, 0.66–1.09; p=0.201).

CONCLUSIONS: SGLT-2is and GLP-1RAs were significantly associated with lower rates of cardiovascular events compared to other GLM classes; however, there does not appear to be a difference in cardiovascular risk between use of SGLT-2is and GLP-1RAs.
PL III-9
EFFECT OF LECTURE CAPTURE ON STUDENT OUTCOMES: A FOCUS ON PHARMACY STUDENTS. Brittany La-Viola, Christina M. Guerra, Kathleen A. Lusk, University of Incarnate Word Feik School of Pharmacy, San Antonio, TX.

PURPOSE: To determine if University of the Incarnate Word (UIW) Feik School of Pharmacy (FSOP) students are using the available lecture recording software, Lecture Capture, appropriately and if this use affects their academic performance. In addition, to evaluate students’ perceptions of Lecture Capture.

METHODS: This survey-based study assessed UIW FSOP students’ use of Lecture Capture. A survey was given to the pharmacy students once in their P2 year (Spring 2018) and again in their P3 year (Fall 2018) to assess how they are using Lecture Capture. It was then determined if they are using Lecture Capture appropriately (i.e. listening to lecture segments to clarify confusing or complicated areas versus listening to full lectures). The primary outcome is the correlation between semester grade point average (GPA) and appropriate use of Lecture Capture. Secondary outcomes include students’ perception of Lecture Capture and its effect on their academic performance.

RESULTS: Results show no statistically significant difference in semester GPA between students who use Lecture Capture appropriately compared to those who use it inappropriately. However, the majority of students feel that using Lecture Capture helps them earn higher grades. Further subgroup analyses will be completed.

CONCLUSION: The appropriate use of Lecture Capture does not affect students’ semester GPA.

IV A – CRITICAL CARE / INTERNAL MEDICINE

PL IV-1
ANALYSIS OF ANTIBIOTIC PROPHYLAXIS DURATION FOR MAXILLOFACIAL TRAUMA AT AN ACADEMIC MEDICAL CENTER. Lucas W. Smedley; Conrado D. Gamboa; Elizabeth O. Hand; Colleen A. Barthol; Dana B. Foster; University Health System, University of Texas at Austin College of Pharmacy, University of Texas Health Science Center at San Antonio, San Antonio, TX.

PURPOSE: Maxillofacial trauma is commonly associated with increased risk of infection due to possible communication between the sinuses/mouth and cerebrospinal fluid, in addition to increased risk of skin and soft tissue infection. Although antibiotics are commonly used to prevent infection, there is no standardized recommendation for duration or choice of agent. The purpose of this study was to evaluate duration of antimicrobial prophylaxis in patients with maxillofacial trauma in a surgical trauma intensive care unit at a large academic medical center.

METHODS: This single-center, retrospective review evaluated duration of antimicrobial prophylaxis in patients admitted to the Surgical Trauma Intensive Care Unit (STICU) at University Hospital from January 1, 2013 to December 1, 2018. Patients were identified by cross-referencing ICD-9 and -10 codes for maxillofacial fractures with patients admitted to the STICU. Exclusion criteria included need for antibiotics at admission for another indication or presence of skull fracture. The primary endpoint was mean duration of antimicrobial prophylaxis in all patients with maxillofacial trauma. Secondary endpoints included duration of prophylaxis according to fracture location, antibiotic-free days in the first 28 days after injury, choice of prophylactic antibiotic, and rate of infection.

RESULTS: A total of 96 patients were included in the study. The most common types of fractures were nasal bone fractures (72.9%), maxillary fractures (47.9%), and orbital fractures (43.8%). High-energy trauma accounted for 61.5% of fractures, with 34.4% due to low-energy trauma, and 3.1% due to penetrating trauma. The majority of injuries were managed non-operatively, but those who were managed surgically primarily had open fracture repairs. The most commonly prescribed antibiotics were ampicillin/sulbactam (37.5%) and amoxicillin/clavulanate (34.4%). Other antibiotics utilized were amoxicillin (16.7%), cefazolin (13.5%), and cephalexin (11.5%). Of note, 16.7% of patients received no antibiotic prophylaxis for their injuries. Median duration of therapy for patients receiving prophylaxis was 7 days (IQR 5-9 days). The median duration of IV therapy (before changing to oral therapy) was 1 day (IQR 0-3 days). No patient in the study, including those who did not receive prophylaxis, developed a fracture-related infection, and a single patient developed a C. difficile infection. The median number of antibiotic-free days in the first 28 days after injury was 21 days (IQR 19-24 days).

CONCLUSION: Choice and duration of antimicrobial prophylaxis in patients with facial trauma is highly variable at our institution, with ampicillin/sulbactam and amoxicillin/clavulanate being the most commonly utilized agents. None of the patients in the cohort developed a fracture-related infection, including those who did not receive prophylaxis. In light of this study and other studies evaluating duration of antimicrobial prophylaxis, quality improvement measures should be taken to standardize duration and choice of antimicrobial prophylaxis in patients with maxillofacial trauma.

PL IV-2
CLINICAL EFFICACY OF ADJUNCTIVE DEXMEDETOMIDINE IN THE TREATMENT OF ALCOHOL WITHDRAWAL COMPARED TO BENZODIAZEPINE SYMPTOM-TRIGGERED THERAPY IN CRITICALLY ILL PATIENTS. Tia Ellise Collier, Lane Farrell, Vivek Kataria, Baylor University Medical Center, Dallas, TX.

PURPOSE: Approximately 9% – 33% of intensive care admissions are associated with alcohol use disorders. Current management consists of symptom-triggered benzodiazepine administration. However, due to emerging literature regarding alcohol withdrawal syndrome (AWS) management, dexmedetomidine utilization has risen. However, data reflecting clinical efficacy, superiority, and cost effectiveness is lacking regarding dexmedetomidine’s ability to adequately treat AWS. Therefore, the purpose of this study was to evaluate the effect of adjunctive dexmedetomidine in the treatment of AWS as compared to benzodiazepine symptom triggered therapy.
as evidenced through a reduction in Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar) scores in critically ill patients.

METHODS: This was a single-center, retrospective cohort analysis of patients diagnosed with AWS admitted to Baylor University Medical Center between August 1, 2015 and August 1, 2018. Patients 18 years of age or older admitted to an intensive care unit (ICU) and required CIWA-Ar Protocol were included. Patients were excluded if they had less than 5 CIWA scores documented during their ICU stay or had a history of seizure disorders. Additionally, patients who did not receive any benzodiazepines or were initiated on dextromethorphan while intubated were excluded. Patients who received benzodiazepines and dextromethorphan were compared to patients who received benzodiazepines without dextromethorphan. The primary endpoint of this study was to evaluate the degree of symptom control as evidence through reductions in average CIWA-Ar scores. Secondary endpoints included an analysis of benzodiazepine requirements in lorazepam equivalents, hospital and ICU length of stay, incidence of adverse events (hypotension, bradycardia, delirium tremens, seizures, and rate of intubation), and the impact of adjunctive medications on AWS treatment. Study outcomes were examined using descriptive and inferential statistics.

RESULTS: To be presented.

CONCLUSIONS: To be presented.

PL IV-3
EVALUATION OF VASOPRESSIN RESPONSE IN CRITICALLY ILL PATIENTS ON CHRONIC ACE- INHIBITOR THERAPY. Paige Baize, Lyndsay Sheperd, Andrew Faust, Texas Health Presbyterian, Dallas, TX.

PURPOSE: To compare the hemodynamic response and vasopressor requirements in critically ill patients receiving vasopressin who were on outpatient angiotensin-converting enzyme (ACE) inhibitor therapy with those who were not on ACE inhibitor therapy.

METHODS: This is a single-center, retrospective cohort study of critically ill patients who received continuous intravenous (IV) vasopressin between January 2013 and April 2018. Patients were included if they were age 18 years or older, admitted to the medical or surgical ICU, and received continuous IV vasopressin. Exclusion criteria were vasopressin administration via IV push or intramuscular route, vasopressin rate of less than 0.02 units/min or more than 0.08 units/min, initiation of another vasopressor in the 24 hours following vasopressin initiation, and pregnancy. Primary endpoints include change in mean arterial pressure (MAP) and concomitant vasopressor requirements (in norepinephrine (NE) equivalents) at 24 hours following vasopressin initiation. Secondary endpoints include change in MAP and concomitant vasopressor requirements at 1, 6, and 12 hours following vasopressin initiation; duration of continuous IV vasopressin; receipt of renal replacement therapy; and ICU and hospital length of stay and mortality.

RESULTS: A total of 180 patients were evaluated. There were no differences between ACE inhibitor and no ACE inhibitor groups regarding change in MAP (9.2 ± 18.3 mm Hg vs 9.2 ± 18.5 mm Hg, p=0.99) and concomitant vasopressor requirements (-0.19 ± 0.16 µg/kg/min vs -0.23 ± 0.28 µg/kg/min, p=0.35) at 24 hours. There were no differences between groups regarding change in MAP or NE requirements at 1, 6, or 12 hours; duration of vasopressin, receipt of renal replacement therapy; or ICU and hospital length of stay and mortality.

CONCLUSIONS: Based on this retrospective analysis, the hemodynamic response and concomitant vasopressor requirements were similar between patients on ACE inhibitor therapy and those not on ACE inhibitor therapy at all evaluated time points following vasopressin initiation.

PL IV-4
EFFECT OF ADJUSTED OR ACTUAL BODY WEIGHT IN CREATININE CLEARANCE CALCULATION ON THE RATES OF DOFETILIDE DISCONTINUATION OR DOSE REDUCTION DURING DOFETILIDE INITIATION. Daria Zavgorodnyaya, Tamara B. Knight, Evan J. Peterson. Seton Healthcare Family, Austin, TX.

PURPOSE: Dofetilide, a class III antiarrhythmic, undergoes extensive renal elimination and requires dose modification in patients with creatinine clearance (CrCl) less than 60 milliliters per minute. The manufacturer recommends using actual body weight (ABW) for CrCl calculation; however, use of ABW in obese patients may result in overestimation of renal function and severe drug toxicities. The purpose of this study is to compare the effect of adjusted body weight (AdjBW) or ABW in CrCl calculation on the rates of dofetilide discontinuation or dose reduction during dofetilide initiation.

METHODS: This single-center, retrospective cohort study included patients admitted to a telemetry unit who received at least one dose of dofetilide under the dofetilide initiation protocol. Creatinine clearance and corresponding dofetilide dose were retrospectively calculated for all subjects based on AdjBW and ideal body weight (IBW). Rates of the primary outcome, dofetilide discontinuation or dose reduction, were compared in patients whose initial dose as calculated by AdjBW and ABW was the same (AdjBW/ABW concordant group) and patients whose initial dose as calculated by AdjBW was lower than that calculated by ABW (AdjBW/ABW discordant group). Additional analysis, defined a priori, evaluated the primary outcome in IBW/ABW concordant and IBW/ABW discordant groups.

RESULTS: In the primary preliminary analysis, there were 96 patients in AdjBW/IBW concordant group and four patients in AdjBW/IBW discordant group. There was no difference in the rate of dofetilide discontinuation or dose reduction (56% vs. 25%, p = 0.3). No difference in the primary outcome was observed in the additional analysis of 100 patients in IBW/ABW concordant and 16 patients in IBW/ABW discordant groups (52% vs. 56%), p = 0.1.

CONCLUSION: Current evidence does not support the use of AdjBW in the CrCl calculation for dofetilide dosing.
PL IV–5
IMPACT OF OBESITY ON REAL-WORLD CLINICAL OUTCOMES IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION ON DIRECT ORAL ANTICOAGULANT THERAPY: A RETROSPECTIVE COHORT STUDY. Nina Kim, Paul J. Godley, Karen Rascati, Jeffrey Michel, Baylor Scott & White Health, Temple, TX.

PURPOSE: Direct oral anticoagulants (DOACs) are widely used anticoagulants in non-valvular atrial fibrillation (NVAF) that significantly reduce the risk of stroke and systemic embolic events. However, there are currently no DOAC dose adjustment recommendations in overweight patients, potentially contributing to sub-therapeutic care. This is largely due to the limited data available on how body weight influences cardiovascular and bleeding outcomes in NVAF patients on DOACs. To date, no large randomized controlled trial has evaluated the efficacy and safety of DOACs in this subgroup. Pharmacokinetic and pharmacodynamic data demonstrating lower DOAC blood concentrations in obese patients have raised concerns of potential under-dosing and subsequent higher thromboembolic risk. However, the clinical implications are unclear. While many real-world studies examining the comparative effectiveness of DOACs in the United States exist, no known study looks specifically at obesity. The purpose of this study is to address this gap in medical literature. The primary objective is to evaluate the impact of obesity on any stroke or systemic embolic events and major bleeding in NVAF patients who are users of dabigatran, rivaroxaban, apixaban, or edoxaban.

METHODS: An observational retrospective cohort study of NVAF patients initiating a DOAC (dabigatran, rivaroxaban, apixaban, or edoxaban) from January 1, 2015 to November 30, 2017 will be conducted using electronic health records and pharmacy and medical claims data from commercial, Medicare, and Medicaid health plan members in Texas. The primary effectiveness outcome is ischemic stroke or systemic embolism. The primary safety outcome is major bleeding, including intracranial bleeding, gastrointestinal bleeding, and major bleeding from other sites. Outcomes will be evaluated across six patient cohorts, stratified by body weight classifications as defined by the National Institutes of Health: underweight (BMI <18.5 kg/m²), normal (BMI 18.5–24.9 kg/m²), overweight (BMI 25.0–29.9 kg/m²), obesity class I (BMI 30.0–34.9 kg/m²), obesity class II (BMI 35.0–39.9 kg/m²), and obesity class III/extreme obesity (BMI ≥40.0 kg/m²). Cox proportional hazards regression will be used to compare time-to-clinical outcomes in each of the cohorts. Subgroup analyses will be performed to examine whether effectiveness varies by baseline risks.

RESULTS: Results pending.

CONCLUSION: N/A

PL IV–6
EVALUATION OF COMPLIANCE RATES FOR FOLLOW-UP VISITS TO ASSESS ADHERENCE AND RE-HOSPITALIZATIONS IN PATIENTS USING LONG-ACTING INJECTABLE ANTIPSYCHOTIC DRUGS WITHIN A LARGE ACADEMIC COMMUNITY HEALTH SYSTEM. Joel Kanter, Krupa Patel, Holly Ryan, Harris Health System, Houston, TX.

PURPOSE: Serious mental illnesses (SMIs), defined as any mental, behavioral, or emotional disorder resulting in a disability that impacts or limits at least one major life activity, impose a particularly large economic burden on the U.S. healthcare system. Previous studies suggest that patients with SMIs, who are non-adherent to therapy, are at a greater risk of experiencing a relapse of symptoms and repeated hospitalizations, and represent a disproportionately large share of the healthcare costs. Additionally, with each relapse it is believed a patient will be less likely to return to his or her baseline level of functioning; further impacting the economic burden of these disease states. Although the determinants of non-adherence are multifactorial, long-acting injectable (LAI) antipsychotic (AP) drugs were developed to assist with improving patient compliance. Treatment of individuals with SMIs requires prolonged pharmacological intervention with AP medications and strict compliance to therapy and outpatient follow up. Current evidence suggests LAIs may improve outcomes in patients with SMI compared to oral APs (OA) by increasing medication compliance. Successful treatment; however, is also dependent on adherence to follow-up outpatient clinic appointments. The purpose of this quality improvement project is to identify potential gaps in patient care through evaluation of medication non-compliance, outpatient follow-up compliance, and to assess readmission rates to the emergency department (ED) ED for patients prescribed LAI APs within a large academic health system. The overarching goal of this project will be to help identify opportunities for pharmacist intervention in patients with SMIs in an effort to improve quality of care and patient outcomes.

METHODS: A multi-center, retrospective chart review will be performed on patients presenting to a Harris Health System ED between June 1, 2016 and June 1, 2018. Patients who are 18 years of age or older, prescribed LAI AP drug, and individuals who use the Harris Health System will be included in the study. Patients who are pregnant incarcerated, or are deceased will be excluded. The following data will be collected: patient demographics, medication name, date of administration, location of the prescribed LAI AP, mental health follow-up appointments, ED admissions, and length of stay. Patients receiving LAI APs will be assessed to determine the primary outcome of non-adherence to follow-up appointments. The secondary outcomes will include ED readmissions.

RESULTS: Results to be presented following completion of data collection and analysis

CONCLUSION: Conclusion to be presented following completion of data collection and analysis.
PL IV-7
TITLE: COMPARISON OF READMISSION RATES BETWEEN FIVE LONG-ACTING INJECTABLE ANTI-PYSCHOTICS IN ACUTELY ILL PATIENTS. 
Micah Johnson, Thomas Joseph Maestri, Shandrika Williams Landry, Daniel Sarpone, Brianna Ledet; Mai-Truc Nguyen, Xavier University of Louisiana, New Orleans, LA.

PURPOSE: Schizophrenia, is a mental disorder that affects approximately 1 in every 200 Americans that can disturb patients’ thought processes, perceptions of the world, and overall functionality. Antipsychotic pharmacotherapy is the mainstay of treatment; however, as many as two thirds of patients are non-adherent to their medications. Though schizophrenia is a chronic disorder, acute episodes that follow non-adherence can require hospitalization and have negative effects on long-term prognosis. Initiation of long-acting injectable antipsychotics (LAI) in the hospital can be a way to prevent rehospitalization. Though each LAI has a different initiation regimen, it is unclear whether there is any added benefit in using one LAI over another. By comparing LAIs’ time to ﬁrst readmission, we will determine if any one agent is more effective than the others in preventing rehospitalization in acutely ill patients. The objectives of the study are to compare the time to readmission and length of stay among five long-acting injectable antipsychotics. Admission data will be analyzed to determine if the patients were readmitted within one year of their initial discharge. Time to readmission and length of stay will be collected.

METHODS: This single-centered, retrospective chart review was approved by Xavier University’s Institutional Review Board and UMCNO’s Research Review Committee. The EHR was used to identify patients who have been discharged from the behavioral health unit from January 1, 2016 to December 31, 2016 on a LAI antipsychotic medication.

Results: Data is currently being analyzed and results are pending.

Conclusions: Conclusion is pending data analysis.

PL IV-8
A RETROSPECTIVE MATCHED COHORT OF QUETIAPINE USE AND HOSPITALIZATIONS IN PATIENTS WITH PARKINSON’S DISEASE PSYCHOSIS IN A VETERAN’S AFFAIRS POPULATION. 
Dozie Dike, Joy Gambir, Kristen Backe, VA North Texas Health Care System, Dallas, TX.

Purpose: Psychosis is a common phenomenon that occurs in patients with Parkinson’s Disease (PD). According to the American Academy of Neurology’s evidence-based review for the evaluation and treatment of depression, psychosis, and dementia in Parkinson’s Disease, quetiapine has a Level C recommendation (may be considered) while clozapine has a Level B recommendation (should be considered). Despite this suggestion, in many institutions quetiapine remains the mainstay treatment option for psychosis in PD. The purpose of this study is to evaluate the magnitude of hospitalizations in patients with PD psychosis treated with quetiapine. The results of this study might indicate whether quetiapine has the potential to decrease hospitalizations due to psychosis in PD patients and thus potentially reduce healthcare spending costs.

Objective: The objective of this study is to assess first hospitalization due to psychosis in patients with PD psychosis treated with quetiapine versus patients with PD psychosis not treated with any antipsychotics.

Methods: This study will include patients on current or previous antiparkinsonian treatment from January 1st, 1995 to January 1st, 2018 and will compare outcomes in PD psychosis patients treated with quetiapine against PD psychosis patients not treated with any antipsychotics using a retrospective matched cohort. The number of hospitalizations due to psychosis will be compared between the two groups.

Results: To be presented.

PL IV-9
ASSESSING REFILL DATA AMONG DIFFERENT CLASSES OF ANTIDEPRESSANTS IN A VETERAN’S POPULATION TO IMPROVE ADHERENCE. 
Hayden M. Stewart, Saadia Basit, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

Purpose: The primary objective of this study was to determine whether three-month adherence rates differ between antidepressant (AD) classes in veterans newly initiated on AD therapy. The secondary objective was to determine differing characteristics between patients with a high medication possession ratio (MPR, ≥ 80%) or a low MPR (<60%).

Methods: A retrospective chart review was conducted including a cross-section of specialty mental health patients identified from the MDD43h measure in the Antidepressant Nonadherence Report. Patients included were ≥18 years old, outpatient for the duration of the study period, newly started on the AD, seen by a specialty mental health provider within study period. Exclusion criteria includes patients prescribed an AD for non-mental health indications, prescribed an AD only for insomnia, prescribed an AD on an “as needed” basis, prescribed trazodone as the only AD, those with cognitive impairment (e.g., dementia), and those diagnosed with non-MDD serious mental illnesses. For the primary objective, data collection points included MPR and the class of antidepressant. For the secondary objective, information collected included demographic information, housing status, Medication Regimen Complexity Index (MRCI) score, number/types of psychiatric diagnoses at index date, involvement in therapy within 3-month timeframe, number of mental health visits within 3-month timeframe, and number of previous antidepressant trials.

Results: A total of 320 patient charts were reviewed for this retrospective analysis, of which 108 patients met criteria for inclusion. Of these, 71 (65.7%) were prescribed an SSRI, 13 an SNRI (12%), 8 bupropion (7.4%), and 16 mirtazapine (14.8%). No patients prescribed a tricyclic antidepressant (TCA) or a monoamine oxidase inhibitor (MAOI) met inclusion criteria. For the primary outcome, there was no significant difference in the between-class adherence rates (p = 0.31), however patients prescribed mirtazapine had the lowest mean MPR (SSRI 78.2%, SNRI 71.5%, bupropion 74.8%, mirtazapine 66%). When comparing characteristics between high MPR patients and low MPR patients, there was no meaningful difference in the number of previous antidepressants (high MPR: 0.89, low MPR 1.54, p = 0.650), number of mental health visits in 3 months (high MPR 2.1, low MPR 1.88, p = 0.333), involvement in therapy (high MPR 35.7%, low MPR, 25%, p = 1.0), gender distribution (both groups with 75% males), ethnic distribution, homelessness (high MPR 10.7%, low MPR 20.8%, p =
organisms, days of total antimicrobial therapy, days of antimicrobial therapy escalation, de-

The primary outcome is a composite endpoint of time to (CPRS) performed using the Computerized Patient Record System.

was uploaded to the facilities intranet as well, and education potential recommendations for therapy. A guidance

During normal business h-

methods) run on a rapid diagnostic panel for identification. 

From the analysis. During the post-

B

VA – INFECTIOUS DISEASES/HIV

PL V-1

ASSESSMENT OF IMPLEMENTATION OF A RAPID BLOOD CULTURE DIAGNOSTIC PANEL AT A VETERAN'S AFFAIRS MEDICAL CENTER. Jordan Chiasson, Marcus Koura, Brad Cutrell, Winter Smith, Tomasz Jodlowski, VA North Texas Health Care System - Dallas, TX.

PURPOSE: This retrospective cohort study will evaluate patients treated at VA North Texas Healthcare System (VANTHCS) to determine the clinical impact of the implementation of a rapid blood culture identification panel on time to optimal antimicrobial therapy, length of hospital stay, and mortality.

METHODS: This study is a retrospective pre- and post-implementation evaluation of a rapid diagnostic panel along with antimicrobial stewardship support and education. Patients at least 18 years old admitted to the VANTHCS with at least one positive blood culture for either bacterial or yeast isolates from March 2017 – October 2017 (pre-intervention) and March 2018 – October 2018 (post-intervention) were eligible. Patients discharged within 24 hours of resulting BCID or with polymicrobial blood cultures were excluded from the analysis. During the post-implementation period, blood cultures were in (additional to traditional culture methods) run on a rapid diagnostic panel for identification. During normal business hours members of the ASP team were available to notify the primary team of results with antimicrobial stewardship support and education. Surveys will be linked to visits based on visit date.

The primary outcome is a composite endpoint of time to optimal therapy from blood culture draw, defined as either escalation, de-escalation, discontinuation or optimization of antimicrobial therapy. Optimal therapy was retrospectively determined by final culture and susceptibility report. Secondary outcomes include each component of the composite outcome, time to optimal therapy for specific organisms, days of targeted antimicrobial therapy, length of hospitalization, 30-day mortality, 30-hospital readmission, accuracy of rapid diagnostic panel to traditional culture methods, and antibiotic related adverse events (acute kidney injury, C. difficile infection, discontinuation due to allergic reactions). Differences in baseline characteristics, time to optimal and effective therapy, mortality, and accuracy of BCID panel will be analyzed between the two groups using the two-tailed Students t, Wilcoxon rank-sum, chi-square, and Fisher exact tests as appropriate.

RESULTS: Pending completion of data collection and statistical analysis.

CONCLUSION: Pending completion of data collection and statistical analysis.

PL V-2

EXAMINING THE RELATIONSHIP BETWEEN PATIENT SATISFACTION AND ANTIBIOTIC PRESCRIBING FOR ACUTE ADULT BRONCHITIS IN AN AMBULATORY SETTING. Marie Yasuda, Nina Y. Kim, Leticia R. Moczygemma, Seth J. Sullivan, Paul J. Godley, Baylor Scott & White Health, Temple, TX.

PURPOSE: Antibiotic resistance is widely recognized as a threat to public health and a drain on limited healthcare resources. Despite institutional, federal, and societal efforts to curb antibiotic use, inappropriate prescribing persists. Previous studies suggest that providers may be writing these prescriptions out of concern that patients will be dissatisfied otherwise. This present study focuses on visits for acute adult bronchitis (AAB), a viral infection that should not be treated with antibiotics. The purpose of this study is to examine differences in patient satisfaction between patients who are prescribed an antibiotic and patients who are not prescribed an antibiotic for AAB.

METHODS: This will be a retrospective study utilizing electronic medical record (EMR) data and associated patient satisfaction survey data. Visits will be identified through an EMR report based on ICD diagnosis codes: inclusion requires a code for AAB, while exclusion is based on codes for confounding conditions, diagnoses, and medication history. Patients will be grouped based on whether or not a prescription for a prespecified list of antibiotics was written for the patient on the visit date. EMR data will be collected on the patient, provider, and visit level to characterize the groups. Surveys will be linked to visits based on visit date and patient MRN. Analyses will include descriptive statistics and logistic regressions.

RESULTS: The final dataset included 2,372 eligible visits: 83% (n=1,960) resulted in an antibiotic prescription and 17% (n=412) did not. The mean age was 60 years old, 61% were female, and 85% were white. The majority (61%) had commercial insurance and 37% had Medicare insurance. Data analysis currently in progress.

CONCLUSIONS: Conclusions will be presented pending completion of data analysis.
PL V-3
TREATMENT OF URINARY TRACT ASSOCIATED GRAM-NEGATIVE BACTEREMIA: IMPACT OF TREATMENT DURATION. Jasmin K. Badwal, Elizabeth O. Hand, Kristi A. Traugott, University Health System, University of Texas Health San Antonio, San Antonio, TX, University of Texas at Austin College of Pharmacy, Austin, TX.

PURPOSE: To investigate the effect of short vs. long course of appropriate antimicrobial therapy on clinical and microbiological outcomes for gram-negative bacteremia (GNB) secondary to urinary tract infections in patients hospitalized at University Health System.

METHODS: This study was a single-center, retrospective review with a timeline of January 2016 – October 2018. Study subjects were screened and selected using a report of all positive blood cultures from gram-negative organisms. Patients ≥ 18 years of age were included if they were admitted or under observation for at least 24 hours, had a bacteremia suspected from a urinary source (positive urine culture with same organism), and received an intravenous or a highly bioavailable oral agent for ≥ 7 days. Patients were excluded if they were pregnant, incarcerated, received inappropriate definitive antimicrobial therapy, had polymicrobial bacteremia with other organisms from a non- urinary source, had unaddressed source control issues (prostatitis, nephrolithiasis, abscess, etc.), or died during the treatment course. Short course (SC) of antimicrobial therapy was defined as 7-10 days, while long course (LC) was ≥ 10 days. The primary composite outcome of treatment failure included both 30-day all-cause mortality and 90-day recurrence. Secondary outcomes included 30-day readmissions and 90-day mortality, resistance development, and C. difficile associated diarrhea (CDAD) diagnosis.

RESULTS: A total of 207 patients were included in this study: 45 patients received SC and 162 received LC of antimicrobial therapy. Both groups were similar at baseline in terms of comorbidities, intensive care unit (ICU) admission, vasopressor initiation, and Pitt bacteremia score. No statistically significant difference in the primary composite endpoint was observed: 2/45 (4.4%) SC vs LC 10/162 (6.2%), p = 0.66. The LC group had higher proportion of patients with chronic foley catheters (SC 2/45 [4.4%] vs LC 20/162 [12.3%]) and recent abdominal/urological surgery (SC 3/45 [6.7%] vs LC 23/162 [14.2%]), although only two of these patients experienced clinical failure. There was also no difference in all-cause mortality, recurrence, resistance development, re-admission rate, and CDAD diagnosis.

CONCLUSION: Consistent with prior studies, we were unable to find a significant difference in clinical failure rates between patients that received short course vs long course of appropriate antimicrobial therapy for treatment of urinary tract associated GNB. Generalizability to more complicated cases including those with inadequate source control may be limited; however, these data add to the body of literature supporting use of shorter antibiotic durations.

PL V-4
A RETROSPECTIVE STUDY EVALUATING THE CLINICAL IMPACT OF INCREASED (6.75 g) PIPERACILLIN-TAZOBACTAM DOSING IN CRITICALLY ILL OBESE PATIENTS FOR PNEUMONIA. Christina X. Tran, Matthew P. Crotty, Methodist Dallas Medical Center, Dallas, TX.

PURPOSE: Piperacillin-tazobactam (PTZ) is an antimicrobial agent that has time-dependent bactericidal activity. Increased doses may be necessary to achieve pharmacokinetic-pharmacodynamic (PKPD) targets in critically ill obese patients with pneumonia. Due to these challenges, a pharmacist-driven PTZ dosing protocol utilizing 6.75 grams for critically ill, obese (≥120 kg) patients for PNA treatment was implemented at Methodist Health System in Dallas, Texas. Our study sought to evaluate the clinical impact of 6.75 grams IV extended infusion (EI) PTZ dosing for the treatment of PNA in critically ill, obese (≥120 kg) patients in comparison to 4.5 grams IV EI PTZ.

METHODS: This was a retrospective, cohort study. Patients weighing ≥ 120 kg on PTZ in the intensive care unit (ICU) from January 2013 to September 2018 were eligible. Patients were included if they were ≥18 years old, met PNA study criteria of positive chest radiography and leukocytosis/leukopenia or hypothermia/fever, and received PTZ cohort dose (4.5 g or 6.75 g for ≥ 48h. Patients were excluded if a respiratory pathogen resistant to PTZ resulted, patient received >1 dose of an anti-pseudomonal antibiotic prior to PTZ, or were pregnant. The primary outcome of the study was 14-day in-hospital all-cause mortality. Secondary outcomes include 14-day-in-hospital infection-related mortality, hospital length of stay (LOS), ICU LOS, and mechanical ventilation duration.

PRELIMINARY RESULTS: Final results will be presented. Of 291 patients screened, 97 were included (37 in the 4.5 g cohort and 60 in the 6.75 g cohort). Median (IQR) age was 58 (46-68) years and 62 (63.9%) of patients were male. Median (IQR) weight of all patients was 142 (131.0-167.3) and median (IQR) BMI of all patients was 47.7 (41.3-57.0) kg/m². Charlson comorbidity index and SOFA scores were similar between groups. The 6.75 g group was more likely to require vasopressors (27.2% 4.5 g vs. 53.3% 6.75 g, p=0.011) and had a trend towards greater mechanical ventilation (64.9% 4.5 g vs. 81.7% 6.75 g, p=0.062). CAP, HAP, and VAP incidence rates did not differ between cohorts. Patients received PTZ for a median (IQR) of 4 (3-7) days. Fourteen-day all-cause in-hospital mortality was similar between cohorts (8.1% 4.5 g vs. 21.7% 6.75 g, p=0.097). Fourteen-day infection-related mortality (8.1% 4.5 g vs. 3.3% 6.75 g, p=0.366) was lower by 4.8% in the 6.75 g cohort despite requiring significantly more vasopressors and a trend towards greater mechanical ventilation requirements. Hospital LOS, ICU LOS, and mechanical ventilation duration did not differ between cohorts.

PRELIMINARY CONCLUSION: Final conclusion will be presented. Increased (6.75 g) PTZ dosing in critically ill, obese patients did not appear to affect all-cause mortality, hospital LOS, ICU LOS, or MV duration. Infection-related mortality was less in the 6.75 grams cohort, but this was not statistically significant, which may be a type II error. Substantial study limitations exist and further investigation of the clinical impact of PKPD optimized dosing of PTZ is warranted.
PL V-5
ASSESSMENT OF IMPLEMENTATION OF DIABETIC FOOT INFECTION AND LOWER EXTREMITY OSTEOMYELITIS ORDER SET.
Michael Kent, Marcus Kourma, Brad Cutrell, Jessica Guastadisegni, Thomasz Jodlowski, VA North Texas Health Care System, Dallas, TX.

PURPOSE: To evaluate the impact of a diabetic foot infection/lower extremity osteomyelitis (DFI/LEO) order set on management of patient at the North Texas Veteran Affairs Health Care System (VANTHCS). The order set was designed as a multidisciplinary quality improvement project (QIP) to potentially decrease length of stay and defer unnecessary admissions.

INCLUSION CRITERIA: Patients at least 18 years old with diagnosis of diabetic foot infection and/or lower extremity osteomyelitis from March 15th 2017 to July 15th, 2018.

EXCLUSION CRITERIA: Patients who left the VA facility against medical advice, transferred to hospice care, homeless patients, or patients transferred from an outside hospital.

METHODS: This study is a retrospective pre and post-evaluation of the DFI/LEO order set implementation. Data was collected via retrospective chart review using Computerized Patient Record System (CPRS). Patients were identified by discharge diagnosis for DFI or LEO. Patients referred from the emergency department to podiatry were also screened. The DFI/LEO order set was implemented October 15th 2017. The order set provided guidance on management of patients admitted to the hospital or presenting to the ED with DFI/LEO. The order set included recommendations for assessment, consults, imaging, medications, and discharge options. A one month washout period was used to exclude patient’s while education about the order set was provided to hospitalist and emergency department teams. The primary outcome is patient length of stay for diabetic foot infections and lower extremity osteomyelitis. Secondary outcomes include antibiotic days of therapy, amputation free survival, time of initial presentation to diagnostic imaging, readmission rates, emergence of multidrug resistant organisms, and rates of Clostridium difficile infection.

RESULTS: Pending

DISCUSSION/CONCLUSION: Pending

VB – INFECTIOUS DISEASES/HIV

PL V-6
EVALUATION OF ORAL ANTIBIOTIC STEPDOWN THERAPY FOR THE MANAGEMENT OF GRAM-NEGATIVE ROD BACTEREMIA IN A TERTIARY CARE MEDICAL CENTER.
Heather Savage, Kyana D. Stewart, Miranda Dermady, Jessica Stover, Jefferson Bohan, S. Travis King, Alaa Mohammed, Ochsner Medical Center, New Orleans, LA.

Purpose: The purpose of this study is to characterize the use of oral stepdown therapy for gram negative rod blood stream infections (BSI) at Ochsner Medical Center. The primary objective of the study is to characterize the differences in clinical failure, readmission, and duration of bacteremia in patients who receive early versus late stepdown to oral antibiotics for treatment of gram-negative rod BSI. Secondary objectives are to delineate what oral agents and dosing regimens are used, determine if inter-pathogen variability between outcomes exist and to describe any adverse outcomes associated with oral antibiotic stepdown therapy.

Methods: Single-center, retrospective, chart review. Patients were identified from January 2016 - December 2017 via laboratory software and the electronic medical record. Patients 18 years and older, with a positive blood culture for E. Coli, Klebsiella spp, Citrobacter, Serratia, Enterobacter, Proteus, or Pseudomonas transitioned to oral antibiotics for the completion of bacteremia treatment were included. Patients were excluded if they were pregnant, had severe renal impairment (creatinine clearance less than 30 mL/min), an HIV/AIDS diagnosis, inability for source control including un-drained localized foci of infection or non-removable infected devices (i.e. left ventricular assist device, implantable cardioverter-defibrillator, prosthetic joint), or required a prolonged course of antibiotics (i.e. osteomyelitis, endocarditis). Age, gender, race, height, weight, Pitt Bacteremia Score, Charlson Comorbidity Index, allergies, source of infection, immunocompromising conditions, presence of central catheter, oral antibiotic selection, white blood cell count, temperature, serum creatinine, blood pressure, heart rate, absolute neutrophil count, time of initial culture and result, time of subsequent cultures and results, resistance profiles, 30-day and 90-day disposition, hospital length of stay, discharge disposition, and reported adverse medication events were collected. All data was recorded without patient identifiers and maintained confidentially.

Results: Data collection and analysis in progress, 160 patients meeting inclusion criteria for analysis to date.

Conclusion: In progress

PL V-7
EFFECTIVENESS OF STEP-DOWN ORAL BETALACTAM ANTIBIOTIC THERAPY FOR ESCHERICHIA COLI, PROTEUS MIRABILIS, AND KLEBSIELLA SPECIES BACTEREMIA.
Michael McAlister, Dusten Rose, Frank P. Hudson, Brian Olivaers, Teresa Jaso, Seton Healthcare Family, Austin, TX.

Purpose: Bacteremia due to Escherichia coli (E. coli), Klebsiella spp., and Proteus mirabilis (P. mirabilis) often require empiric intravenous antibiotics. Oral antibiotics for the definitive treatment of these infections have been reserved to antibiotics with “high” oral bioavailability, mainly fluoroquinolones. Safety concerns and increasing resistance associated with fluoroquinolones has modified clinical practice to identify alternative oral therapies. Select beta-lactam antibiotics are well-tolerated, have moderately high bioavailability, and are effective in vitro against many E. coli, Klebsiella spp., and P. mirabilis isolates. Limited evidence exists for oral beta-lactam “step down” therapy for definitive treatment of bacteremia due to these organisms.

Methods: This retrospective chart review will compare clinical outcomes of patients treated with oral beta-lactam antibiotics to those who received oral fluoroquinolones or trimethoprim/sulfamethoxazole for the definitive treatment of bloodstream infections due to in vitro susceptible strains of E. coli, Klebsiella spp., and P. mirabilis. Patients with polymicrobial bacteremia, deep-seated infections, retained
Conclusions: To be presented at the meeting.

Objective: The objective of this quality improvement project developed to improve adherence to the algorithm. Once institutional approval was received, interventions were performed to characterize management of neutropenic fever in the emergency room. Subsequently, clinician interviews/shadowing were conducted and submitted for approval to the Institutional Quality Improvement Assessment Board. Subsequently, clinician interviews/shadowing were performed to characterize the processes of initial management of neutropenic fever in the emergency room. Once institutional approval was received, interventions were developed to improve adherence to the algorithm.

Objective: The objective of this quality improvement project is to increase compliance with guideline-directed vancomycin use by 30% in three months.

Results: In progress.

Conclusions: To be presented at the meeting.

Background: Optimal management of neutropenic fever in the cancer population is key in reducing the morbidity and mortality associated with potentially life threatening infections. Previous studies and neutropenic fever guidelines recommend against the empiric use of vancomycin, or other expanded spectrum gram-positive coverage, in neutropenic fever management unless certain criteria are met. These recommendations are largely due to the fact that gram-negative pathogens are associated with higher mortality rates and are more commonly the causative pathogens. With the implementation of an institutional algorithm to guide neutropenic fever management, an assessment of current clinical practice, as compared to the guideline was undertaken to identify opportunities for improvement.

Methods: This quality improvement project assessed concordance of a newly implemented algorithm with actual neutropenic fever management, specifically in patients with solid tumor malignancy. Through retrospective chart review, data was collected on: recent antibiotic use, location and selection of antimicrobial therapy at initiation, and duration and re-assessment of targeted antimicrobial therapy. Baseline data was reviewed and opportunities for improvement were identified. This lead to an AIM statement that was created and submitted for approval to the institutional Quality Improvement Assessment Board. Subsequently, clinician interviews/shadowing were performed to characterize the processes of initial management of neutropenic fever in the emergency room. Once institutional approval was received, interventions were developed to improve adherence to the algorithm.

Objective: The objective of this quality improvement project is to increase compliance with guideline-directed vancomycin use by 30% in three months.

Results: In progress.

Conclusions: To be presented at the meeting.

Impact of Rapid Pathogen Identification and Dedicated Clinical Pharmacist on Time to Appropriate Therapy and Total Antibiotic Days in Patients with Positive Blood Cultures. Robert Basnett, Tiffany LaDow, John Midturi, Robert Fader, Hector Ramirez, Marie Yasuda, Gennifer Garmon, Kiumars Zolfaghari, Thuy Vu, Scott & White Medical Center - Temple, Temple, TX.

Introduction: Septicemia has become one of the major causes of death — the second most common reason for hospitalization. In addition, there is increased mortality related to delay of effective therapy. Prompt identification of causative pathogens allows providers to implement effective targeted therapy in order to decrease mortality. Traditional culture methods for identification of organisms require an extended amount of time due to the need to wait for growth of organism on media. Newer rapid identification methods such as the Nanosphere Verigene System® can simultaneously detect and identify potentially pathogenic gram positive and negative bacteria that cause blood stream infections along with resistance markers. Despite the increased costs associated with this testing, studies have shown significant cost benefits, reduced length of stay, decreased total antibiotic therapy, and decreased mortality.

Background: Optimal management of neutropenic fever in the oncology population is key in reducing the morbidity and mortality associated with potentially life threatening infections. Previous studies and neutropenic fever guidelines recommend against the empiric use of vancomycin, or other expanded spectrum gram-positive coverage, in neutropenic fever management unless certain criteria are met. These recommendations are largely due to the fact that gram-negative pathogens are associated with higher mortality rates and are more commonly the causative pathogens. With the implementation of an institutional algorithm to guide neutropenic fever management, an assessment of current clinical practice, as compared to the guideline was undertaken to identify opportunities for improvement.

Methods: This quality improvement project assessed concordance of a newly implemented algorithm with actual neutropenic fever management, specifically in patients with solid tumor malignancy. Through retrospective chart review, data was collected on: recent antibiotic use, location and selection of antimicrobial therapy at initiation, and duration and re-assessment of targeted antimicrobial therapy. Baseline data was reviewed and opportunities for improvement were identified. This lead to an AIM statement that was created and submitted for approval to the institutional Quality Improvement Assessment Board. Subsequently, clinician interviews/shadowing were performed to characterize the processes of initial management of neutropenic fever in the emergency room. Once institutional approval was received, interventions were developed to improve adherence to the algorithm.

Objective: The objective of this quality improvement project is to increase compliance with guideline-directed vancomycin use by 30% in three months.

Results: In progress.

Conclusions: To be presented at the meeting.
PL VI-1
IMPACT OF IN-HOSPITAL CLINICAL PHARMACISTS’ ACTIVITIES ON 30-DAY READMISSION AMONG HIGH-RISK MEDICARE SHARED SAVINGS PROGRAM (MSSP) PATIENTS.

Akeem O. Bale, Kim Bir cher, David Putney, Divya Varkey, Alex Varkey, Houston Methodist Hospital, Houston, TX.

PURPOSE: To investigate the impact of structured and standardized clinical pharmacists’ activities on 30-day readmission rates among high-risk MSSP patients.

METHODS: This was a multi-center, retrospective, observational study at a major health system in Houston, TX. We conducted a chart review of all adult high-risk MSSP patients who were admitted and received a pharmacist consult at Houston Methodist from June 1, 2018, through December 31, 2018, with a 30 days follow-up. The clinical pharmacists’ activities completed for these patients include medication history, targeted medication education, and discharge support (discharge counseling and prior authorization support).

RESULTS: A preliminary analysis of 153 patients was performed. A total of 142 patients (69 male [48.6%] and 73 female [51.4%]; median age, 70 years, interquartile range, 62-79 years) met the inclusion criteria and were included in the interim analysis. Of the 142 patients who received a pharmacist consult, at least one pharmacist activity was completed for 97 patients. Preliminary results showed a decrease in 30-day readmission rates when at least one pharmacist activity was completed compared to when a pharmacist activity was not completed 40.2% vs. 53.3%.

CONCLUSION: Based on the interim data, in-hospital pharmacists’ activities may reduce 30-day hospital readmission among high-risk MSSP patients.

PL VI-2
SIGNIFICANCE OF DRUG-DISEASE INTERACTION ALERTS IN A HEALTH-SYSTEM.

Stella M. Kim, David R. Putney, Sunny Bhakta, Divya Varkey, Kevin W. Garey, Houston Methodist Hospital, Houston, TX.

PURPOSE: Medication errors and adverse drug events are common and can cause substantial harm. Many errors which result in injury can potentially be prevented by the use of appropriately designed computerized clinical decision support (CDS) alerts. Electronic healthcare record (EHR) systems that embed CDS can reduce medication errors by alerting to drug-disease interactions. Previous studies have identified up to 44% of the general population are estimated to have drug-disease interactions; however the clinical relevance of these alerts is inconclusive.

METHODS: This 16-week multi-center case-control-control study integrated EHR technology with a commercial alert database to evaluate the clinical significance of drug-disease interaction alerts. This study specifically focused on agents that have the potential to exacerbate QTc prolongation. The primary objective of this study was to assess the incidence of QTc prolongation in patients identified with a QTc drug-disease interaction alert compared to similar patients in which a QTc drug-disease alert did not occur. Indirect effects including cardiopulmonary arrest, requiring resuscitative efforts, and inpatient mortality were also assessed.

RESULTS: A total of 41,470 patient encounters were reviewed. The case group represented patient encounters in which drug-disease interaction alerts were fired. 178 patient encounters in the case group received 1,341 alerts, of which 450 (33.6%) alerts were associated with administered medications. For doses administered, 39 patient encounters (21.3%) experienced QTc prolongation.

CONCLUSION: A systematic assessment of harmful outcomes associated with drug-disease interaction alerts may provide opportunities to identify clinically impactful alerts versus non-clinically significant alerts. Further studies are still warranted to evaluate a larger subset of drug-disease interaction alerts to determine the long-term impact on patient outcomes.

PL VI-3
IMPACT OF HEALTH SYSTEM SPECIALTY PHARMACY SERVICES IN AN AFFILIATED DIGESTIVE DISEASE CENTER. Illiana Rangel, Joseph Rogers, Rodney Cox, Monica Green, David Wallace; Memorial Hermann, Houston, Texas.

Purpose: Specialty medications account for 50% of the total drug cost in the United States; a 36% increase from 2015. By 2020, this could reach $400 billion with specialty medications accounting for up to 65% of annual spend. As the cost of healthcare continues to rise, Health System Specialty Pharmacies (HSSPs) have the opportunity to improve quality of care and contain patients’ cost through an integrated specialty pharmacy program. The primary objective of this study is to evaluate the impact of a specialty pharmacist on the ability to access direct antiviral therapy in patients with HCV.

Methods: A retrospective cohort study was conducted for Memorial Hermann patients who visited the Ertan Digestive Disease Center pre and post implementation of a specialty pharmacist. Patients were excluded if they were less than 18 years of age, were co-infected with HIV and HCV, and/or if they were not prescribed direct acting antiviral therapy. The primary outcome of this study is to determine time to treat for patients with HCV. Secondary endpoints include sustained virologic response, drug-drug interactions identified and appropriately managed, and time to treat by insurance type. The data will be utilized to identify opportunities for expanding specialty pharmacy services within the Memorial Hermann Health System.

Results: To be presented.

Conclusion: To be presented.

Disclosure: The authors of this presentation have nothing to disclose.
ADDED VALUE OF ACUTE CARE PHARMACY PRACTICE FACULTY TO A HEALTHCARE INSTITUTION. Sydney N. Kutter, Sebastian Perez, Charlotte Farris, Delaney Ivy, Texas A&M Irma L. Rangel College of Pharmacy, Temple, TX.

PURPOSE: To describe the added value the academic pharmacy team brings when providing inpatient services to acute care teams at an academic medical center. Added value was described in the form of documented clinical interventions.

METHODS: Study data was collected retrospectively via electronic medical record data of clinical interventions (labeled as “i-vents” in the Epic system) at the hospital. Interventions were eligible if they were made by the Texas A&M Irma L. Rangel College of Pharmacy academic pharmacy team from July 1, 2018 to December 10, 2018. Members of the academic pharmacy team included two acute care faculty members, one PGY2 internal medicine resident, four PGY1 pharmacy practice residents, and eight fourth year pharmacy students. Interventions were classified into four different drug therapy needs and seven subsequent categories of drug therapy problems (indication: unnecessary drug therapy, needs additional therapy), efficacy (ineffective drug, dosage too low), safety (adverse drug reaction, dosage too high), and convenience (non-adherence/non-compliance).

RESULTS: Based on preliminary analyses, 357 interventions were deemed eligible for the study. The academic pharmacy team most frequently intervened on the drug therapy need of indication (27.3%), followed by convenience (26.8%), safety (26%), and efficacy (19.8%). The drug therapy problem most frequently intervened upon was non-adherence/noncompliance (26.8%), followed by adverse drug reaction (14.8%), dosage too low (14.8%), needs additional therapy (14.5%), unnecessary drug therapy (12.8%), dosage too high (11.1%), and ineffective drug (5%).

CONCLUSION: Preliminary analyses demonstrate that pharmacists play a large role in identifying drug therapy problems in each of the indication, efficacy, safety, and convenience drug therapy needs. The most common category of drug therapy problems that the academic pharmacy team identified was non-adherence/non-compliance. This was driven by medication reconciliations and discharge counseling sessions provided to patients identified as having multiple medication changes or who were noncompliant with their prior home regimen. Final analyses will review approximately 400 further interventions and will also group involved medications by class to determine if a common trend exists among the classes of medications that the academic pharmacy team targets for interventions.

ANALYSIS OF INTERPROFESSIONAL EDUCATIONAL EXPERIENCES WITHIN A REQUIRED ADVANCED PHARMACY PRACTICE EXPERIENCE (APPE) PROGRAM. Taylor Horyna, Craig Cox, Charles F. Seifert. Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

PURPOSE: To determine if interprofessional educational experiences offered on required APPE rotation sites are providing interprofessional opportunities that are consistent with student and preceptor perceptions.

METHODS: A survey was developed and sent out to all preceptors that practice at required APPE sites for fourth year of the pharmacy program regarding each of the four tenants of interprofessional education (IPE) as defined by the Interprofessional Education Collaborative (IPEC). Responses will be collected from fourth year students who have completed APPE rotations in the last year regarding a short reflection of their interprofessional education experiences. At the conclusion of each APPE rotation in the prior year (2018-2019), preceptors completed a final competency assessment of their students in the areas of IPE. Data from the survey, student reflections, and preceptor evaluations will be analyzed independently and collectively to determine any positive or negative relationships related to the ability of a practice site to effectively deliver quality interprofessional education experiences. Survey results from students on APPE rotations will be compared with results from a preceptor survey regarding the quality of intentional interprofessional activities at each rotation site in all four tenants of IPE from the IPEC standards. Areas of weakness will be determined, then pilot programs will be implemented in each type of rotation site to provide substantive learning at each site that is optimal in preparing future health professionals for advanced team-based care of patients.

RESULTS: Thematic evaluation of student response, data collection, and analysis are currently in progress.

CONCLUSION: Pending completion and will be presented at the meeting.

IMPACT OF A PHARMACIST-DRIVEN PROTOCOL TO IMPROVE GUIDELINE-CONCORDANT PRESCRIBING OF ORAL DIABETES MEDICATIONS IN PATIENTS WITH ATHEROSCLEROTIC CARDIOVASCULAR DISEASE. Dakota L. Freudenberg, Les P. Covington, Miti V. Patel, Rodney B. Young, Nicole D. Lopez, Eric J. MacLaughlin, Texas Tech University Health Sciences Center, Amarillo, TX.

PURPOSE: Newer diabetes medications such as liraglutide, empagliflozin, and canagliflozin have been shown to reduce the risk of cardiovascular (CV) events in patients with type 2 diabetes and atherosclerotic cardiovascular disease (ASCVD). The purpose of this study is to determine whether the implementation of a clinical pharmacy-driven protocol is associated with an increased proportion of patients prescribed liraglutide, empagliflozin, and canagliflozin.
METHODS: A retrospective pre- and post-intervention study conducted at the Texas Tech Center for Community and Family Medicine. A comprehensive protocol and educational initiative were implemented in November 2018, which involved the creation of an algorithm outlining and differentiating diabetes medications recommended in patients with ASCVD. An in-service presentation was delivered to the medical residents and faculty physicians with copies of the protocol and algorithm distributed. Patients were identified from an ICD-10 code query and confirmed based on manual review of the electronic health record. Eligible patients were offered an appointment with a clinical pharmacist to focus on improving diabetes management and initiating CV risk-reducing medications if appropriate per protocol.

RESULTS: A total of 234 patients were screened and 108 met inclusion. Upon completion of patient outreach (up to 3 phone attempts/patient), 34% (n=37) were scheduled with a clinical pharmacist, 24% (n=26) declined the offer, and 42% (n=45) were unable to be reached. Almost half of the patients (43%; 16 of 37) attended the pharmacist appointment. Of those, 31% were initiated on an appropriate medication indicated for the management of type 2 diabetes and ASCVD. Of the 71 patients not scheduled with a pharmacist, 1 patient has since been initiated on an evidence-based regimen. In comparing pre- to post-implementation of this protocol, the rate of guideline-concordant prescribing of these medications increased by 57% (7% to 11%).

CONCLUSION: Implementation of a pharmacy-driven protocol can increase guideline-concordant prescribing and may improve patient outcomes. However, further exploration and mitigation of patient- and system-level barriers is necessary to more broadly implement such a program.

PL VII-2


BACKGROUND AND RATIONALE: While there is general agreement that initial pharmacotherapy for treatment of T2DM should be metformin, unless contraindications exist, there is much debate about which agent to use second-line. Patient-specific considerations generally guide the selection of a second-line antidiabetic agent, with cardiovascular risk being an important consideration. Real-world prescribing may be driven by medication cost, glycemic effect, renal status, side effect profile, and provider/patient preference. This study will identify the antidiabetic agents most often used second-line among the 9.5 million beneficiaries of the MHS. The study will also analyze differences in utilization across pharmacy points of service (i.e., military treatment facilities, mail order, and retail network), as well as based on key patient characteristics (i.e., age, weight, body mass index [BMI], hemoglobin A1c [HbA1c], cardiovascular risk, congestive heart failure, and kidney function).

OBJECTIVE: To identify the second antidiabetic agent prescribed after initial first-line therapy with metformin for T2DM in the MHS as well as differences in utilization based on the pharmacy point of service and patient characteristics.

STUDY DESIGN AND METHODS: This retrospective claims analysis will include pharmacy and medical data for a 30 month period from January 1, 2016 through June 30, 2018. Study participants will be included if: 1) the index prescription for a second-line agent occurred during the 1-year study period (July 1, 2017 to June 30, 2018); 2) an ICD-10 code for T2DM was coded 18 months prior to or during the study period; 3) at least one claim adjudicated for metformin up to 4 months prior to the study period; 4) there was no other paid claim for any other antidiabetic medication up to 18 months prior to the study period; 5) patient was age ≥ 18 years at the time of the claim for the second-line antidiabetic prescription; 6) patient was enrolled in TRICARE Prime, Plus, or TRICARE for Life as of the initial claim for the second-line antidiabetic. The study design is intended to provide a recent snapshot of second-line antidiabetic use. Data collection will include ICD-10 codes indicative of atherosclerotic cardiovascular disease (ASCVD) (e.g., cardiovascular disease, coronary artery disease, peripheral artery disease), as well as codes for congestive heart failure and chronic kidney disease. A subgroup analysis of patients receiving care at a military treatment facility will examine correlations between the choice of second antidiabetic agent and these concomitant conditions, as well as weight, BMI, and HbA1c.

RESULTS: In progress.

CONCLUSION: Results from this study will inform Department of Defense (DoD) Pharmacy and Therapeutics (P&T) Committee evaluations and the DoD formulary decision-making process for antidiabetics. The study may also serve as a baseline for future analysis of changes in patterns of use as a result of clinical evidence, guidelines, or formulary changes.

PL VII-3

EFFECT OF PHARMACIST LED DRUG THERAPY MANAGEMENT ON A1C CHANGES IN SOUTH TEXAS PATIENTS IN A DIABETES CLINIC. Annette De Santiago, Stephanie Cedrone, Rene Verduzco, Daniela Bazan, Doctors Hospital at Renaissance, Edinburg, Texas.

PURPOSE: To assess impact pharmacists have had on hemoglobin A1c changes in diabetic patients in an endocrinology clinic in South Texas. Pharmacists were recently integrated in this clinic to be part of a collaborative team.

METHODS: This is a retrospective cohort study of 2 matched patient groups who received diabetes management in a single center from September 2017 to October 2018. A1c changes were compared from patients who received at least 1 pharmacist drug therapy management (DTM) intervention while concurrently seen by endocrinologist and other members of the healthcare team to patients receiving diabetes care only from the endocrinologist with no pharmacist DTM defined as no pharmacist’s notes in electronic medical record. Patients included in this study are those 18 years and older, HbA1c >7%, and diagnosis of type 2 diabetes mellitus. Patients were excluded if they did not have a pre-DTM visit A1c or a post-DTM visit A1c HbA1c <7%, and with type 1 diabetes mellitus.

RESULTS: Research in progress.

CONCLUSION: Research in progress.
**PL VII-4**


**PURPOSE:** Rates of obesity continue to rise worldwide as evidenced in the 2017 CDC report that indicated over 35% of US citizens are obese, with Louisiana ranked as the fifth most obese state in America. Since large clinical trials tend to exclude obese patients, health care providers are often challenged with drug dosing in obese patients and are faced with concerns of under- or overdosing these patients. Despite the decades of clinical research, warfarin usage still withstands numerous obstacles due to patient-specific characteristics. While the ACCP guidelines have recommended therapeutic warfarin dosing in special patient populations such as elderly, malnourished, and patients with high bleeding risk, there is currently no dosing guidance for warfarin therapy in the obese population. Though it appears that patients with overweight and obese patients tend to have higher warfarin requirements, use of BMI guided dosing is not well established for warfarin management. This study will provide insight to establish what impact BMI, in addition to pertinent patient characteristics, has on 90-day warfarin requirements.

**METHODS:** This study has been IRB approved by Xavier University of Louisiana and University Medical Center New Orleans. The EHR provided data on patients who were taking warfarin for indications that have a goal INR within the range 2-3. The following data was collected: gender, age, race, height, weight, BMI, tobacco status, alcohol intake, vitamin K intake, marijuana use, hospital admissions and INRs between June 1, 2017 and September 30, 2017. Additionally, the chronic use of significant interactive drugs was collected, of which include: amiodarone, metronidazole, quinolones, azole antifungals, NSAIDs, sulfamethoxazole/trimethoprim, systemic steroids, antplatelet, and anticonvulsants. All data was recorded without patient identifiers and maintained confidentially. The BMI status according to the WHO classifications were categorized and paired with average 90-day warfarin doses. The INRs were also categorized based on the clinical definition for time in therapeutic range to further appropriate dosing regimens between obese and non-obese patients.

**RESULTS:** Currently in progress.

**CONCLUSION:** To be presented.

**PL VII-5**

**A RETROSPECTIVE COHORT STUDY TO EVALUATE THE APPROPRIATENESS OF FLUOROQUINOLONE USE AND THEIR SAFETY OUTCOMES IN THE OUTPATIENT TREATMENT OF ACUTE UNCOMPLICATED CYSTITIS.** Maj Thomas Robinson, Stephanie Giancola, JBSA-Ft Sam Houston, Texas, 78234.

**BACKGROUND:** The Infectious Diseases Society of America guidelines recommend nitrofurantoin monohydrate/macrocrystals (100mg twice daily for 5 days), trimethoprim-sulfamethoxazole DS twice daily for 3 days) if local resistance rate of E. coli does not exceed 20%, or fosfomycin tromethanol (3gm in a single dose) as first-line choices for treatment of acute uncomplicated cystitis whereas fluoroquinolones are considered alternatives if the first-line options are unavailable or contraindications exist. However, fluoroquinolones have been misused in the treatment of uncomplicated cystitis infections for more than a decade. Hospital and community use of fluoroquinolones has not only led to resistance among the pathogens that commonly cause urinary tract infections, but have also been associated with vancomycin resistant Enterococcus as well as resistance to more virulent pathogenic organisms, such as methicillin resistance in Staphylococcus aureus. Fluoroquinolones are also associated with important safety concerns that have led to the addition of FDA boxed warnings to the package insert. It is essential to find the root cause of prescribing tendencies for uncomplicated cystitis in order to help fix the problem of non-adherence to guidelines and combat resistance to antibiotic regimens.

**OBJECTIVE:** To evaluate the appropriateness of fluoroquinolone use for the treatment of uncomplicated cystitis in patients treated at the five local Brooke Army Medical Center (BAMC) Family Practice Patient Centered Medical Homes (PCMHs). Also, to evaluate trends and predictors for fluoroquinolone use and to compare the rates of adverse drug reactions, C. difficile infection, repeat visits for uncomplicated cystitis or pyelonephritis caused by drug-resistant organisms, and drug-drug interactions between fluoroquinolones and nitrofurantoin monohydrate used for the treatment of acute uncomplicated cystitis.

**Methods:** This study will be a retrospective cohort study. The Military Health System (MHS) Data Repository will be queried to identify antibiotic prescriptions for non-pregnant women aged 19-64 years dispensed within 7 days of an encounter with an International Classification of Diseases, 10th Revision (ICD-10) code consistent with cystitis (N30.00, N30.01, N30.80, N30.81, N30.90, N30.91, or R30. 0) between 1 February 2017 and 31 May 2018. Patient charts will be accessed in order to assess for appropriateness of therapy (based on allergy status, current or previous history of resistant organisms, renal function, and symptoms) as well as comorbidities, drug-drug interactions, adverse drug reactions, development of C. difficile infection within 90 days, and repeat visits within 6 months (including urine culture data).

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

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

**PL VII-6**

**HYPERGLYCEMIA POST-INFLUENZA VACCINE IN PATIENTS WITH DIABETES.** Abigail Hulsizer, Elizabeth Urtega, Amy Witte, University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX.

**BACKGROUND**

In the last 30 years, there have been over 300 reports of transient hyperglycemia following the influenza vaccine according to the vaccine adverse effect reporting system (VAERS). Most of the reports of hyperglycemia came within the first 4 days post-vaccination. No further information has been published regarding this potential adverse effect besides a single case report published in 2018. This case report looked at a 41-year-old male patient with well-controlled diabetes who reported symptoms of lethargy and grogghiness 2 hours after his flu vaccination. He also
reported an unusual episode of hyperglycemia about 6 hours after vaccination. His blood glucose when reported had risen to more than two times his baseline. He reported no changes in medication prior to vaccination nor changes in diet. Additional research may help identify if this is an adverse event affecting all patients with diabetes in which an additional counseling point may be necessary for the influenza vaccine.

**OBJECTIVE**
To determine the change in blood glucose levels from baseline to days 0-4 post influenza vaccination.

**METHODS**
This study is a prospective cohort study assessing the effects of the influenza vaccine on hyperglycemia in patients with diabetes. Patient participation was decided at flu shot clinics throughout the San Antonio area organized and run by Carvajal pharmacy from October 2018 to December of 2019. Clinics took place at both community and long-term care facilities. At each flu clinic, a research investigator was available on site to provide and collect consent. Following the clinic, participants checked their blood glucose within 24 hours post immunization. Participants were asked to check a fasting level before breakfast every morning for 4 days following the day of their vaccine. Data collection took place via telephone call or utilization of the electronic medical record. Blood glucose levels for each day to assess for transient hyperglycemia were recorded.

**RESULTS**
A total of 18 subjects have completed the study to date. The majority of the patients were greater than 55 years of age. The mean A1c was 6.9% ± 1.3% and patients were on a wide variety of oral and injectable medications for diabetes. Per the interim results, the median for blood glucose was no different pre-vaccine vs. 0-24 hours post-vaccine (195mg/dL vs.195.5mg/dL, p=0.96). Further data collection will take place in the fall of 2019 along with full statistical analysis on the expanded number of patients.

**CONCLUSION**
Conclusion to be presented upon completion of final round of data collection and analysis.

**PL VII-7**

**CHARACTERISTICS ASSOCIATED WITH OVERUTILIZATION OF ANTIBIOTICS IN AN OUTPATIENT SETTING FOR ADULT ACUTE BRONCHITIS (AAB) IN CENTRAL TEXAS.** Maricar Conson, Nina Kim, Delaney Ivy, Sandy Diec, Marie Yasuda, Paul Godley. Baylor Health Enterprises. Temple, TX.

**Purpose:**
Acute bronchitis contributes to many visits in the outpatient setting in the United States. Acute bronchitis usually is viral in etiology; however, antibiotics are still being overutilized for this diagnosis. Increasing outpatient antimicrobial stewardship efforts may lead to a reduction in adverse effects, costs, and antimicrobial resistance associated with overutilization of antibiotics. Currently, there is no data associating characteristics and likelihood of being prescribed antibiotics for adult acute bronchitis in Central Texas. The aim of this study is to find a correlation, should one exist, of patient and provider characteristics with antibiotic use in adult acute bronchitis.

**Methods:**
Approval by the Institutional Review Board was obtained for this retrospective chart review of electronic medical records of patients diagnosed with acute bronchitis. Patients aged 18 or older with an ICD-10 diagnosis of acute bronchitis was included in this study. Exclusion criteria included the following: antibiotic use 30 days prior to provider visit date; HIV, malignancy neoplasms, emphysema, COPD, cystic fibrosis, immune system disorders 12 months prior to visit date. Additional exclusion criteria included pharyngitis or competing conditions 30 days prior to the visit date through 7 days after the visit date. The following data will be collected: patient age, gender, ethnicity, payer status, smoking status, Elixhauser comorbidity index, provider information (age and NPI). The primary outcome will be rates of antibiotics prescribed, characteristics of patients who received an antibiotic, and characteristics of providers who prescribed antibiotics.

**Results:**
Preliminary results of the descriptive and bivariate analysis. A total of 35,383 acute adult bronchitis visits occurred during the data collection period. 28,788 visits resulted in an antibiotic being ordered vs. 6,595 visits did not result in an antibiotic (81.4% vs. 18.6%). The cohort more likely to order an antibiotic were the internal and family medicine practitioners, while mid-level practitioners were less likely to order an antibiotic. Visits in which the patient was a Caucasian female between 18-64 years of age were the most likely to result in an antibiotic. Patients with commercial insurance and with a median outcome from $65,000-$130,000 were also factors associated with the visit resulting in an antibiotic being ordered.

**Conclusion:**
Pending final results and logistic regression.

**VIIB – AMBULATORY CARE**

**PL VII-8**

**ASSESSMENT OF GLYCEMIC CONTROL IN VETERANS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND TYPE 2 DIABETES ON INHALED CORTICOSTEROID THERAPY.** Madison Lempp, Meredith Sigler, Courtney Duval, Adebola Adesoye, North Texas VA Health Care System, Dallas, TX.

**Purpose:**
Systemic corticosteroids are notorious for worsening glycemic control via the decreased production of and sensitivity to insulin, increased resistance to insulin, and increased production of glucose in the liver. Inhaled corticosteroids (ICS) are commonly prescribed to patients with severe COPD or patients who have persistent exacerbations of COPD (GOLD C and D), because they decrease the risk of exacerbation and improve quality of life. ICS are thought to have minimal systemic absorption leading to negligible side effect profiles. However, ICS concentrations have the ability to reach systemic circulation through the lungs after exerting its pharmacological effect or through the gastrointestinal tract as a result of being swallowed. Currently, studies have shown mixed evidence on the association between ICS and worsening glycemic control in patients with pre-existing diabetes.

**Methods:**
The objective of this retrospective study is to determine if the use of ICS therapy affects glycemic control in patients with COPD and Type 2 diabetes compared to patients with COPD and Type 2 diabetes not receiving ICS therapy. Data will be recorded from electronic
medical records of Veteran patients with COPD and type 2 diabetes from January 1, 2000 to December 31st, 2017 at the VA North Texas Health Care System (VANTHCS).

Information regarding baseline COPD and diabetes characteristics including classes of medications the veteran is being treated with, A1c at 12 months and 5 years post-ICS initiation, time to event of A1c > 10%, and ER visits/hospitalizations related to COPD or diabetes during the follow-up period will be collected. Patients whose baseline A1c is ≥ 9% or who are on insulin therapy at baseline will be excluded.

Results: To be presented

PL VII-9
THE APPROPRIATE USE OF STATINS IN PATIENTS WITH DIABETES OR HYPERLIPIDEMIA AT THE FAMILY PRACTICE CLINIC AT EAST JEFFERSON GENERAL HOSPITAL. Blake Lewis. Fahamina Ahmed, East Jefferson General Hospital, Metairie, LA.

Purpose: This study focuses on two of the four “statin benefit groups” described in the 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults: adults aged ≥21 years old with LDL-C ≥ 190 mg/dL and adults aged 40-75 years old with diabetes and LDL-C 70-189 mg/dL. The objective of the study was to assess how well these two groups of patients were being optimized on statin therapy. By analyzing current patterns of statin use in two of the statin benefit groups, we can identify gaps and disparities in the care of patients at risk for ASCVD and work to better optimize statin therapy and lower cardiovascular risk in these patients.

Methods: This was a single-center, retrospective chart review of patients between the ages of 40 and 75 years old that were seen in the Family Practice Clinic between 1/1/2018 and 11/27/2018. The patients had either a recorded LDL value greater than 190 mg/dL or had both an LDL value between 70 mg/dL and 189 mg/dL and an HbA1C value greater than 6.5% between 1/1/2015 and 11/27/2018. Data collected included age, gender, LDL value, the calculated ASCVD risk, whether or not the patient was put on a statin initially, whether or not the patient is on a statin currently, and the statin intensities were, what the desired statin intensities were, and whether or not the patient was on the appropriate statin intensity initially and currently. Descriptive statistics were used to determine rates of appropriate statin use.

Results: A total of 100 patient charts were reviewed. 58% of patients with LDL>190 mg/dL were initiated on a statin, and 38% were initiated on a statin of appropriate intensity. In contrast, 76% of patients in the diabetes group were initiated on a statin, and 62% were initiated on a statin of appropriate intensity. In the LDL>190 group, 58% of patients are currently on a statin, but only 36% are on a statin of appropriate intensity. In the diabetes group, 84% of the patients are on a statin currently, and 66% are on the appropriate intensity statin.

Conclusions: The data shows that fewer patients with LDL values greater than 190 mg/dL are on the appropriate statin than patients with diabetes and LDL between 70 and 189 mg/dL. Both groups have a lower percentage of patients on the appropriate statin than we would like. We can use this information to educate providers and patients in the clinic going forward to better optimize patient care.

PL VII-10
ASSESSING THE PREVALENCE OF DIABETIC RETINOPATHY IN WELL-CONTROLLED TYPE 2 DIABETES MELLITUS PATIENTS ON FIBRATE THERAPY. Anthony Nguyen; Raven Jackson; Vincent Ekenga; Candice Wilson; Janel Bailey-Wheeler. Xavier University of Louisiana College of Pharmacy, New Orleans, LA.

Purpose: Type 2 diabetes mellitus accounts for 90-95 percent of all diabetes cases, with 30-40 percent of those patients having diabetic retinopathy. It is well established that diabetic complications are linked to poor glycemic control. Literature has suggested that low HDL-C may lead to diabetic retinopathy. Fibrates are common agents that have been shown to raise HDL-C. There has also been promising evidence of fibrates delaying the progression of diabetic retinopathy. Therefore, the purpose of this study is to assess the prevalence of diabetic retinopathy in well-controlled type 2 diabetes patients on fibrates.

Methods: The study has been approved by the Institutional Review Board. The electronic medical record system was used to retrospectively identify and compare well-controlled type 2 diabetes patients who have an ICD-10 diagnosis of diabetic retinopathy. In our study, hemoglobin A1C (HgA1c) less than or equal to 8 percent will be defined as well-controlled. The following data was collected: hemoglobin A1C, patient age, gender, ethnicity, systolic blood pressure, diastolic blood pressure, current medication list, diagnosis of type 2 diabetes mellitus and diabetic retinopathy, and lipid panel. All data was collected without patient identifiers and maintained confidentially.

Results: In progress

Conclusion: To be presented

PL VII-11
CLINICAL OUTCOMES ASSOCIATED WITH INAPPROPRIATE ANTIBIOTIC PRESCRIBING IN UNCOMPLICATED ACUTE ADULT BRONCHITIS (AAB) IN THE OUTPATIENT SETTING. Diana Li, Nina Kim, Delaney Ivy, Sandy Diec, Marie Yasuda, Paul Godley, Baylor Health Enterprises, Temple, TX.

Purpose: Acute bronchitis is usually a viral manifestation but remains one of the most common reasons for an antibiotic prescription. Overutilization of antibiotics can increase rates of Clostridium difficile (CDI) infections without resolving cough symptoms indicating an increased need for attention to outpatient antimicrobial stewardship. Identifying the clinical consequences resulting from unnecessary antibiotic use will be helpful for constructing effective strategies in this setting. The purpose of this study is to compare the clinical outcomes and rates of healthcare utilization of patients with AAB who received antibiotics with those who did not receive antibiotics in the outpatient setting.

Methods: Approval by the Institutional Review Board was obtained for this retrospective chart review of patients with acute bronchitis. Inclusion criteria consisted of patients ages 18 or older with an ICD-10 diagnosis of acute bronchitis. Exclusion criteria were: antibiotic use 30 days...
prior to provider visit date; HIV, malignancy, emphysema, COPD, cystic fibrosis, immune system disorders 12 months prior to visit date; pharyngitis or competing conditions 30 days prior to visit date through seven days after visit date. The primary outcome is to compare rates of CDI, development of pneumonia, and healthcare utilization. CDI rates will be detected in patients by positive stool tests within 12 weeks after the provider visit date in the absence of the following: a stay in a healthcare facility 12 weeks prior to the stool test date and a positive stool test 8 weeks prior to the stool test date that is unrelated to acute bronchitis treatment. To identify acid-reducing therapies, medication histories will be collected for three months prior to visit date. To measure healthcare utilization, any outpatient, inpatient, or ED visit six weeks following the provider visit date will be counted. ICD-9 and ICD-10 codes for pneumonia will be collected for those visits.

RESULTS: Data collection and analysis currently in progress.

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

PL VII-13
EVALUATION OF COST SAVINGS AND GLYCEMIC CONTROL BEFORE AND AFTER THE CONVERSION FROM LIRAGLUTIDE 1.8MG TO LIRAGLUTIDE 1.2MG AT A VETERANS AFFAIRS MEDICAl CENTER. Fiona I. Imarhia, Janeca Malveaux, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

PURPOSE: Glucagon-Like Peptide 1 Receptor Agonists are injectable incretin hormones approved for the treatment of type II diabetes. They are highly efficacious agents with significant hemoglobin A1c lowering potential and mechanisms of action that results in weight loss. As a result of a cost savings initiative, the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC) established liraglutide 1.2 mg as its preferred agent and converted patients from exenatide and liraglutide 1.8 mg to liraglutide 1.2mg. However, the benefit of this change remains unknown. The objective of this study is to assess sustained glycemic control and cost savings that resulted from this change.

METHODS: A retrospective chart review will be conducted at the MEDVAMC to include patients on liraglutide 1.8 mg plus insulin plus and/or minus metformin who were converted to liraglutide 1.2 mg between May 2018 and August 2018. Demographic data, HbA1c, serum glucose levels, body weights, prescriber type, and medication history will be obtained using the Computerized Patient Record System (CPRS). Patients’ chart will be evaluated over a 6-month evaluation period and descriptive statistics will be used to calculate differences in baseline characteristics and HbA1c as appropriate. This study has been approved by the MEDVAMC Quality Assurance and Regulatory Affairs.

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

CONCLUSION: The conclusion is still pending at the time of this submission.

VIIC – AMBULATORY CARE & GERIATRIC PHARMACY

PL VII-14
USE OF A DIABETES DECISION TREE TO EVALUATE THE EFFECTIVENESS OF A PHARMACIST-RUN DIABETES CLINIC ON PATIENT OUTCOMES. Devon El-Dana, Michelle Munch, Amy Jo Harzke, Melissa T. Johnson, University of Texas Medical Branch – Correctional Managed Care, Huntsville, TX.

PURPOSE: The prevalence of diabetes in the United States is on the rise and portends to have a significant impact on the economy as well as population health. Numerous studies show the positive impact of pharmacist intervention on clinical outcomes. The objective of this study was to assess the effectiveness of pharmacist intervention on patient outcomes by comparing A1C reduction in patients with uncontrolled diabetes managed by a pharmacist versus patients managed by a primary care provider (PCP) alone.

METHODS: In this retrospective study, patients with uncontrolled diabetes that received care at a medical facility
with the assistance of pharmacist clinical services were compared to a facility where patients received care from a PCP alone. Pharmacists utilized a diabetes decision tree developed based on 2017 American Diabetes Association guidelines to track outcomes. The decision tree is embedded in the electronic health record (EHR). For patients seen by a pharmacist, a query was run through the EHR for all decision tree data from the initial implementation date of the decision tree, November 1st 2017, to July 31st 2018. For patients seen by a PCP alone, a query was run for all patients with an A1C drawn on or before July 31st 2018 at the selected comparison facility. Eligible patients were 18 years of age or older, had uncontrolled diabetes mellitus with an A1C greater than or equal to 7%, and were seen by a pharmacist or provider for a visit between January 1st 2016 and July 31st 2018 with a follow-up visit at least 3 months after. The primary outcome of interest was reduction in hemoglobin A1C. Reduction in A1C percentage was defined as change from baseline A1C compared to most recent follow-up A1C. The secondary outcomes of interest were blood pressure and the use of statins and aspirin when clinically appropriate.

RESULTS: A total of 414 patients were screened. Of the 414 patients, 183 patients did not meet inclusion criteria. Of the remaining 231 patients, 91 were managed by a pharmacist while 140 were managed by a PCP alone. Baseline mean A1C in the pharmacist managed and PCP managed groups were 9.71% ± 1.9% and 9.07% ± 1.8%, respectively. Follow-up mean A1C in the pharmacist cohort was 8.53% ± 1.9%, indicating an A1C reduction of 1.18%. Follow-up A1C in the PCP cohort was 8.56% ± 1.9%, indicating a reduction of 0.5%. Pharmacist intervention resulted in a greater change in A1C of 0.68% compared to PCP intervention (p = 0.023).

CONCLUSION: Compared with PCP management, pharmacist intervention in the treatment of diabetes led to a greater mean A1C reduction.

PL VII-15
IMPACT OF NEW CLINICAL PHARMACY SPECIALIST HEART FAILURE MANAGEMENT CLINIC ON HOSPITALIZATIONS IN A RURAL SETTING. Daniel Taylor, Tyson Kubena, West Texas Veterans Affairs Health Care System (WTXVAHCS), Big Spring, TX.

PURPOSE: Heart failure (HF) is a complex disease with a high level of morbidity and mortality. In the ambulatory care setting, appropriate HF management has been shown to reduce hospitalizations and, as a result, healthcare costs. Clinical pharmacists are uniquely equipped to educate patients with heart failure, provide medication reconciliation, monitor for drug interactions or intolerances, assess medication adherence, evaluate appropriateness of medication therapy, and provide continuity of care through more frequent follow up appointments. The purpose of this quality improvement project is to determine whether the management of heart failure through clinical pharmacy specialist referral improves patient outcomes, specifically hospitalizations in a rural clinic setting.

METHODS: This quality improvement study was approved by the Pharmacy and Therapeutics Committee. A structured chart review of patients seen for HF in the newly started WTXVAHCS cardiology clinic will be performed and compared to hospitalization data from non-VA managed heart failure patients. The electronic medical record will be used to identify patients referred for clinical pharmacy specialist HF management. Patients will be included in clinical pharmacy specialist group analysis based on heart failure diagnosis and pharmacy clinic referral. Additionally, medication adherence will be monitored based on refill history in pharmacist managed group.

RESULTS: Data collection and analysis currently in progress.

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

PL VII-16
OPTIMIZING PREVENTATIVE CARE AND TREATMENT FOR HEPATITIS C PATIENTS THROUGH PHARMACIST INTERVENTIONS AT CHARITY CLINICS. Quy M. Tran, Krista Heinrich, Kiara Talabi, Amulya Tatachar. Baylor Health Enterprises, Dallas, TX.

BACKGROUND: Pharmacists in ambulatory clinic settings are well positioned to optimize the care of hepatitis C (HCV) patients by administering immunizations and managing the drug-drug interactions (DDI) associated with hepatitis C treatment. Although the Centers for Disease Control and Prevention (CDC) recommends hepatitis A (HAV) and hepatitis B (HBV) vaccines for HCV patients, vaccination rates remain low, particularly in the indigent patient population. Health disparities and costs associated with vaccinations are common barriers to receiving vaccinations on schedule in the underserved community. Pharmacists under a vaccination administration protocol can improve vaccination rates for HCV patients by engaging patients, ensuring adherence to the vaccination schedule, and facilitating patient assistance programs to fund vaccines. In addition, drug-drug interactions can impact the efficacy and safety of the HCV treatment plan. Pharmacists are well-recognized as important health team members who can decrease medication-related errors and improve overall patient outcomes through DDI screenings and interventions. Baylor Scott & White Health (BSWH) Community Care clinics provide care for indigent patients 200% below federal poverty level. The BSWH Community Care clinics at Worth Street and Fort Worth have integrated pharmacists to administer HAV and HBV vaccinations and perform DDI screenings for patients initiating HCV treatment.

PURPOSE: The purpose of this study is to assess the impact of pharmacists on the proportion of HAV and HBV vaccinations administered pre and post pharmacist involvement, and optimization of HCV patient care plans through DDI screenings and interventions.

METHODS: This is a retrospective chart review of HCV patients. Electronic health records were reviewed from February 1, 2016 to March 1, 2019. Patients aged 18 years and above with a diagnosis of chronic hepatitis C at Baylor Scott & White Community Care Clinics were included in the study. Patients were excluded if they had a contraindication to receiving HAV or HBV vaccinations. Data regarding patient demographics, including age, gender and race were collected. HAV and HBV vaccination doses, HCV treatment drug name, medications, number of DDI, type of DDI, interacting drug class, class of drug interactions, and type of interventions were also collected.

RESULTS: The collection of data and analysis is pending.
CONCLUSION: The results of this study will be presented following data collection and analysis.

PL VII-17
IMPACT OF INTENSIVE EDUCATIONAL IN-SERVICES ON NALOXONE DISPENSING RATES IN A LARGE COMMUNITY PHARMACY CHAIN, Kaili N. Meadows, Nancy T. Williams, Lisa A. Appeddu, Southwestern Oklahoma State University College of Pharmacy/Walgreen Co., Oklahoma City, OK.

PURPOSE: Centers for Disease Control and Prevention recorded 32,445 prescriptive opioid-related deaths in 2016. To help combat this epidemic, all 50 states have granted pharmacists authority to dispense naloxone; however, many patient-pharmacist barriers exist to dispensing this product. The study objectives are: 1) compare changes in naloxone dispensing rates in select community pharmacies who have received an educational in-service versus pharmacies who did not, and 2) assess changes in pharmacists’ knowledge of the naloxone dispensing protocol, procedure, and perceived barriers in those who have received an educational in-service versus those who did not.

METHODS: Fourteen Oklahoma City pharmacies within a large community pharmacy chain were randomized and stratified based on pharmacy demographic data (average number of prescriptions filled daily, pharmacy hours of operation, average pharmacy employee hours per week, median patient household income, patient income per capita, median patient age, and patient race) to receive an educational in-service (intervention group, n=7) or no intervention at all (control group, n=7). All locations received the chains’ current naloxone protocol and procedure via company email, which signify the first day of study initiation. One week later, all pharmacists meeting inclusion/exclusion criteria were asked for consent via email to participate in a pre-educational survey to assess demographics, baseline knowledge, and perceived barriers to dispensing naloxone. The intervention groups’ pharmacists were given a 20 to 30 minute in-service, which involved educating pharmacists on the naloxone state protocol and dispensing procedure. Naloxone-specific, patient-pharmacist scenarios were also included. Thirty days later, follow-up occurred. Ninety days after study initiation, all pharmacists will be emailed a post-educational survey to analyze changes in perceived barriers, knowledge of state protocol, and dispensing procedure. The intervention and control groups’ naloxone dispensing rates will be compared to determine the effect of on-site education. The University IRB Committee and Walgreens Corporate have approved this study, which will last from December 2018 to March 2019. Participants who complete both the pre-survey and post-survey will be raffled to receive a paid lunch for their pharmacy staff.

RESULTS: As of late February, 38 pharmacists were actively enrolled in the study. Of these pharmacists, 26 (68%) completed the pre-survey with greater participation in the intervention group versus the control group (78% vs. 60%). Data collection will continue through early March 2019. Post-surveyes and naloxone dispensing rates will be collected at that time. Data will be analyzed with descriptive and quantitative statistics.

CONCLUSION: Pending results

PL VII-18
CHANGE IN GERIATRIC ANTICHOLINERGIC BURDEN DURING INPATIENT ADMISSION. Shannon D. Rice, Charlotte Farris, Nina Kim, Baylor Scott and White Medical Center, Temple, TX.

PURPOSE: Extensive evidence supporting the association between increased anticholinergic burden in the geriatric population and negative clinical outcomes exists; however, substantial change to clinical practice has yet to occur as these agents are still frequently prescribed for this population. Theories for the disconnect include absence of a clinically significant anticholinergic burden at baseline, and lack of literature documenting clinical outcomes secondary to acute burden reduction. The goal of this study is to further elucidate the incidence and change of anticholinergic burden in a targeted geriatric population over acute stay with a secondary endpoint correlating findings to 30-day readmission.

METHODS: Retrospective cohort review assessing the anticholinergic burden of patients ≥ 65 years old admitted for fall, acute fracture, or altered mental status (AMS). Exclusions included those with an underlying cause of AMS such as infection, metabolic abnormality, acute coronary syndrome, or acute respiratory failure, those with underlying cause of fracture such as trauma, those receiving palliative or hospice care, and those that died within 30 days of admission. Burden of medication regimen was assessed upon admission and discharge utilizing the Anticholinergic Cognitive Burden Scale (ACB). Burden to be reported both as change during admission and ACB at discharge alone with clinical significance defined as an ACB of three or greater. Descriptive statistics to be used to define the primary outcome and variables including age tier (65-74, 75-84, ≥ 85), gender, discharge disposition, defined as ambulatory or facility-dwelling, specialty service care, and 30-day all-cause readmission.

RESULTS: The analysis included 265 patients admitted from January 2015 through August 2018. The population had uniform distribution of admission diagnosis and an average age of 82.7 years old. Average admission ACB was 2.6 with 43.4% of patients having a score ≥ 3. The primary outcome of average change in ACB and discharge ACB was -0.2 and 2.5 respectively. Most patient’s scores remained unchanged (64%) at discharge; 14% increased by an average of 1.9 and 22% decreased by an average of 2.0 over the course of admission. These distributions were not homogenous throughout diagnosis groups as those with fracture had higher rates of increased scores (19.7%) and those with AMS had higher rates of decreased scores (26.3%). Most common medications contributing to scores were metoprolol and furosemide. Of note, quetiapine was the most common anticholinergic prescribed during admission with 7 patients taking prior to admission and 18 upon discharge. Overall re-admission rate was 17.0%, noting that 28.8% of re-admissions were for additional fall, fracture, or AMS.

CONCLUSION: Clinical inertia related to anticholinergic medication is prevalent in the acute care setting. Patients with AMS may be more likely to have interventions lowering their anticholinergic burden than those admitted for fracture or fall. Of those readmitted, more than 1 in 5 were secondary to continued AMS, additional fall, or new fracture. Additional studies evaluating targeted intervention impact on re-admission rate and reason are warranted.
PL VII-19
ASSESSMENT OF STATIN USE AND THE INCIDENCE OF ALZHEIMER’S DISEASE IN VETERANS. Lydia Jalowiec, Kristen Backe, Rick Weideman. Veterans Affair North Texas Health Care System, Dallas, TX.

Background: Studies found that patients who developed dementia had higher total cholesterol levels at midlife than in those who did not develop dementia. It is suggested that statin users were less likely to develop AD due to the changes in the brain cholesterol homeostasis and other mechanisms such as control of neuroinflammation. It is unclear whether the association differs between the different statins, as they have varying lipophilicities and potencies.

Purpose: To compare the incidence of development of Alzheimer’s Disease (AD) between rosvastatin, pravastatin, atorvastatin and simvastatin at the Veterans’ Affairs North Texas Health Care System (VANTHCS). Secondary outcomes include 1) comparisons between the lipophilicity of the statin and prevalence of AD, and 2) assess the time to AD development from statin initiation in those that developed AD.

Methods: Using data retrospectively collected between October 1998 and September 2018 from the VANTHCS’s electronic database, we will compare the incidence in development of AD between those taking atorvastatin, simvastatin, pravastatin and rosvastatin. Patients had to receive one of the four study statins 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. Patients were included if they were 50 years or older when they started a HMG-CoA Reductase Inhibitor. Additionally, in those that developed AD we compare the time to AD development from statin initiation.

Results: To be presented.

VIIIA – CRITICAL CARE

PL VIII-1
EMPIRIC ANTIBIOTIC PRESCRIBING PATTERNS FOR PATIENTS PRESENTING WITH SEPSIS TO THE ICU AND CHARACTERIZING PATIENTS AT HIGH RISK FOR MULTI-DRUG RESISTANT ORGANISMS (MDRO). Amy Kiley, Jigna Patel, Samuel Akinuyele, Memorial Hermann Southwest Hospital, Houston, TX.

Purpose: The presence of MDRO risk factors should be assessed during empiric antimicrobial selection. Surveillance of bacterial resistance patterns is a crucial aspect of antimicrobial stewardship for hospital systems. The purpose of this study is to describe and evaluate empiric antibiotic prescribing patterns for patients presenting to the ICU with sepsis. This study will also evaluate the culture and susceptibility patterns of this patient population, and characterize patients at high risk for MDRO infections.

Methods: This is a retrospective cohort study. A randomized list of eligible patients was created based on ICD 10 diagnosis codes of patients admitted July 1, 2016 – July 1, 2018. Subsequent application of inclusion and exclusion criteria will determine the final number of patients to be evaluated. Planned enrollment is 200 patients. Inclusion criteria are adult patients admitted to the ICU with the diagnosis of sepsis and initiated on empiric antibiotics. Patients without appropriate cultures drawn prior to antibiotic initiation and patients who receive outpatient or inpatient antibiotics within 48 hours prior to ICU admission will be excluded.

Results: In progress.

Conclusion: To be presented.

PL VIII-2
IMPACT OF DISCONTINUATION OF HOME NEUROPSYCHIATRIC MEDICATIONS ON SEDATION MANAGEMENT IN VENTILATED PATIENTS. Peia Lee, Malarvizhi Narayanan, Memorial Hermann Memorial City Hospital, Houston, Texas.

Purpose: To evaluate the impact of discontinuation of home neuropsychiatric medications on sedation management in ventilated patients.

Methods: A retrospective chart review from January 2015 to December 2018. Inclusion criteria are adult patients (≥ 18 years old), mechanically ventilated patients for more than 48 hours and are on home neuropsychiatric medications, and admitted to medical ICU. Patients who are on deep sedation (RASS score -4 to -5), chronic ventilation prior to admission, severe anoxic brain injury, comfort care, extubated, discharged, expired less than 48 hours within ICU admission will be excluded. The primary outcome is the proportion of time in sedation range (RASS score -2 to 0). The secondary outcomes are the duration of mechanical ventilation and prevalence of delirium (CAM-ICU score). Other outcomes are ICU length of stay, hospital length of stay, self-extubation, proportion of time of sedative/ opioid escalated and deescalated and total sedation requirement based on the amount of sedative/opioid doses were used. Statistical analysis of Chi-square, Mann-Whitney and p < 0.05 for statistical significance will be performed using Excel software.

Results: Data collection and analysis currently in progress.

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

PL VIII-3
COMPARATIVE EFFICACY AND SAFETY OF CONTINUOUS INFUSION KETAMINE-BASED SEDATION VERSUS NON-KETAMINE SEDATION IN THE MEDICAL ICU. Melanie Jaeger, Rebecca L. Attridge, G. Christina Gutierrez, Luke A. Neff. University Health System, University of Texas at Austin College of Pharmacy, University of Texas Health Science Center at San Antonio, University of the Incarnate Word, San Antonio, TX.

Purpose: Ketamine is a N-methyl-D-aspartate (NMDA) receptor antagonist with both sedative and analgesic properties. It is FDA-approved for induction and maintenance of general anesthesia, but is frequently used off-label. Because of its unique mechanisms of action, there
has been increasing interest in ketamine as an adjunct agent for sedation in the critically ill. Several studies have evaluated ketamine continuous infusion for sedation of traumatic brain injury patients; however, little evidence exists on ketamine use in the medical intensive care unit (MICU). The primary objective of this study was to determine if ketamine increases percent of time at goal Richmond Agitation-Sedation Scale (RASS) score versus non-ketamine sedation in MICU patients.

METHODS: This was a single center, retrospective chart review of patients admitted from January 2013 to December 2018. Pharmacy billing records were used to identify patients who received continuous infusion ketamine or non-ketamine sedatives (NKS) including dexmedetomidine, fentanyl, midazolam, or propofol while in the MICU. The primary outcome was percent of time at goal RASS score of 0 to -3. Secondary outcomes included concomitant sedative and vasopressor requirements; percent of time at goal pain score; intermittent anti-hypertensive, benzodiazepine, and analgesic use; Confusion Assessment Method for the ICU (CAM-ICU) scores and anti-psychotic use; and enteral nutrition tolerance. Outcomes including heart rate (HR), mean arterial pressure (MAP), and concomitant sedative requirements were also evaluated before and after ketamine initiation.

RESULTS: A total of 172 patients were included in the study (n=86 ketamine, n=86 NKS). Baseline characteristics were similar between groups with the exception of baseline anti-psychotic use, which was higher in the ketamine group (25.6% vs 9.3%, p=0.008). Percent of time at goal RASS was not significantly different between groups (78.7% vs 81.4%, p=0.29). Concomitant sedative requirements were also not different between groups. Ketamine patients required less norepinephrine, receiving a median of 0.07 mg/kg over the study period versus 0.13 mg/kg in the comparator group (p=0.02). There was no difference in number of patients with positive CAM-ICU scores (p=0.27), new scheduled anti-psychotics (p=0.50), or arrhythmias (p=1.00). In the ketamine group, ketamine initiation increased maximum MAP (p=0.006) and percent of pain scores at goal (p=0.009).

CONCLUSION: Ketamine did not increase percent of time at goal RASS score versus non-ketamine sedation but was well-tolerated with no increase in delirium or arrhythmias. Ketamine reduced norepinephrine requirements and increased percent of time at goal pain score. Based on the results of this study, continuous infusion ketamine appears to be a safe and effective alternative for sedation in the MICU; however, prospective randomized, controlled trials are needed to determine its optimal place in therapy for this patient population.

PL VIII-4
CALCIUM REPLACEMENT STRATEGIES IN CRITICALLY ILL PATIENTS RECEIVING MASSIVE TRANSFUSION. Casey M. Barrett, Maegan M. Whitworth, Krystal K. Haase, Taryn B. Bainum, David S. Harper, Kami Woodard, Texas Tech University Health Sciences Center School of Pharmacy, Amarillo, TX.

PURPOSE: Hypocalcemia is a common complication associated with massive transfusion. There are two approaches to calcium replacement: a proactive strategy where calcium is given based on anticipated transfusion requirements and a reactive strategy, where calcium is administered in response to a low ionized calcium (CaI) level. The purpose of this study was to determine whether proactive versus reactive administration of calcium is associated with decreased hypocalcemia and related complications.

METHODS: This was a retrospective cohort study of adult patients who received massive transfusion at a tertiary care hospital between January 2015 and September 2018. Subjects were identified through a query of Trauma Services and Blood Bank transfusion records and confirmed by manual chart review. Serum CaI values, calcium replacement, blood products, and clinical outcomes were collected. The primary outcomes were lowest reported CaI level and prevalence of critical CaI level (<0.9 mg/dL). Secondary outcomes included total calcium received in 48 hours, time to first CaI level, ICU mortality, arrhythmia, shock requiring vasopressors, recurrent bleeding and mechanical ventilation. For univariate analysis, a Student’s t-test was used for continuous variables and a Fisher’s Exact test for categorical data. Multivariate logistic regression will be performed to compare dependent variables while accounting for potential confounders.

RESULTS: A total of 119 (81.5%) patients received calcium replacement in a reactive strategy while 27 (18.5%) received calcium proactively. The lowest reported CaI was, on average, higher in the proactive versus reactive group (1.03 vs 0.9 mg/dL, p=0.003). More patients in the reactive group had a critical CaI (<0.9 mg/dL) although not statistically significant (40.9% vs. 18.2%, p=0.053). There was no difference in total calcium received in 48 hours or time to initial calcium replacement. Expectedly, time to first CaI was significantly longer in the proactive group compared to the reactive group (3.64 vs. 1.19 hours, p=0.003). Complications were infrequent, with no difference in ICU mortality, documented arrhythmia, recurrent bleeding, and shock requiring vasopressors. Fewer patients in the proactive group required mechanical ventilation (87.4% vs. 70.4%, p=0.04).

CONCLUSION: Reactive calcium replacement is a more common approach within our institution. This was associated with a lower mean CaI and a trend towards lower risk of critical CaI values. Implementation of a protocol-driven calcium replacement practice for patients receiving massive transfusion may prevent critical CaI levels and associated complications.

PL VIII-5
ASSESSING THE MANAGEMENT OF PAIN, AGITATION, AND DELIRIUM (PAD) IN THE INTENSIVE CARE UNIT (ICU) AT EAST JEFFERSON GENERAL HOSPITAL. Klaire Kingrey, Anh Le, Amber Davis, East Jefferson General Hospital, Metairie, LA.

PURPOSE: In the intensive care unit (ICU) patients often experience pain, agitation, and delirium (PAD). Studies suggest that managing PAD appropriately in critically ill patients will correlate with better patient outcomes, decreased time of mechanical ventilation, and reductions in cost. The purpose of this study is to evaluate the assessment and management of pain, agitation, and delirium of patients in the intensive care unit at East Jefferson General Hospital according to the Society of Critical Care Medicine Pain, Agitation, and Delirium guidelines.
METHODS: This is a single-center, retrospective chart review of patient charts between January 1, 2018 and December 31, 2018. Charts reviewed included 10 randomly selected patient charts per month. Data was collected from the institution’s electronic medical records.

RESULTS: A total of 343 patients were determined to be eligible for review and of these 100 patients were randomly selected for inclusion. Patients were assessed with validated score assessments: Behavioral Pain scale (BPS) for pain, Richmond Agitation and Sedation Scale (RASS) for agitation, and Confusion Assessment Method for the ICU (CAM-ICU) for delirium. The study population received a total of 910 doses of opioids; 89% of the doses were associated with a pain score and 78.6% were reassessed 30 minutes after the dose was given. Less than 50% of patients received non-opioid analgesics and only 7% of patients received neuropathic pain meds. A target RASS score of -2 to 0 was achieved in 31% of the patients. There were 444 doses of intermittent sedatives given: 27.3% which were associated with a corresponding RASS score and 0.05% were reassessed after 30 minutes of administration. Out of 100 patients, 6 patients received antipsychotics with 4 patients having documented delirium. CONCLUSION: Data shows that patients are not being treated appropriately per the PAD guidelines. Not all doses of analgesics, sedatives, and antipsychotics were given based on validated score assessments. Further education on documentation and validated scales is needed.

PL VIII-6
OPTIMIZING CARDIAC MONITORING WITH ADMINISTRATION OF NEOSTIGMINE. Linda Arrabi, Reagan Collins, Michelle Horng, University of Texas MD Anderson Cancer Center, Houston, Texas.

BACKGROUND: Neostigmine is a cholinesterase inhibitor used for the treatment of acute colonic pseudo-obstruction. Its adverse effects include bradycardia (6.3-11.1%) and excessive salivation. Atropine is an antimuscurinic used for the treatment of symptomatic bradydardia. There is currently no institutional policy mandating the need for cardiac telemetry monitoring nor is there an associated as needed (PRN) atropine order linked with neostigmine to facilitate rapid administration in the incidence of symptomatic bradycardia.

OBJECTIVE: To increase as needed (PRN) atropine orders at bedside and increase appropriate telemetry monitoring for all patients receiving neostigmine.

METHODS: This quasi-experimental study was conducted at MD Anderson Cancer Center. All adult (>18 year old) inpatient neostigmine administrations from 4/1/2016 through 8/22/18 were included in the pre-interventional data. Collection points included demographic information, neostigmine administrations, continuous cardiac monitoring, concomitant use of medications with the potential to cause cardiac adverse drug effect, heart rate before and after neostigmine administration, symptoms of bradycardia, and atropine or glycopyrrolate administration for bradycardia treatment. We created an order panel linking neostigmine with PRN atropine and mandated prolonged cardiac monitoring for all patients receiving neostigmine. Written and verbal education was provided to nursing, prescribers, and pharmacists. Similar data collection points will be reviewed post intervention.

RESULTS: 76 patients received neostigmine during the pre-intervention phase. The incidence of bradycardia was 14.47% and symptomatic bradycardia was 1.3%. Only 28% of patients receiving neostigmine had a PRN atropine order for symptomatic bradycardia. Post intervention data and results are in progress.

Conclusion: Research and conclusion pending.

PL VIII-7
COMPARATIVE EFFICACY AND SAFETY OF HYDROCORTISONE VERSUS FLUDROCORTISONE AS ADJUNCTIVE THERAPY IN SEPTIC SHOCK. Ashley E. Lock, G. Christina Gutierrez, Elizabeth O. Hand, Colleen A. Barthol, Rebecca L. Attridge, University Health System, San Antonio, TX; The University of Texas at Austin, College of Pharmacy, Pharmacotherapy Division, Austin, TX; The University of Texas Health Science Center at San Antonio, San Antonio, TX; University of the Incarnate Word, Feik School of Pharmacy; San Antonio, TX.

PURPOSE: To determine the efficacy and safety of hydrocortisone (HC) versus fludrocortisone plus hydrocortisone (FC + HC) as adjunctive therapy in septic shock. Routine use of fludrocortisone in septic shock patients began in March 2018, following publication of APROCCHSS trial, which found decreased mortality with FC + HC compared to placebo. APROCCHSS was in contrast to previous literature evaluating HC versus placebo, which did not find a difference in mortality. The current study aims to determine the benefit of FC + HC against an active comparator of hydrocortisone.

METHODS: Single-center, retrospective review of patients admitted to the medical intensive care unit of a large academic hospital between October 2017 and November 2018. Patients were identified using pharmacy billing records for HC or FC. Patients who received HC alone for treatment of septic shock were compared to those who received FC + HC in a 1:1 ratio. Primary outcome was time to reversal of shock.

RESULTS: A total of 78 patients were included with 39 in each group. Patients had similar baseline demographics, including Simplified Acute Physiology Score II (SAPS II) (FC + HC, 44.0 vs. HC, 45.0; p=0.64) and Sequential Organ Failure Assessment (SOFA) scores (6.0 vs. 9.0; p=0.39). There was no difference in primary outcome of median time to reversal of shock (FC + HC, 62.8 hours vs. HC, 48 hours; p=0.09). Independent predictors of shock duration included use of midodrine (p=0.009) and duration of mechanical ventilation (p=0.02). Additionally, risk reduction in time to CV SOFA ≤ 3 for FC + HC did not meet statistical significance (RR 0.59, 95% CI 0.33 – 1.03; p=0.06). No differences were seen in secondary outcomes of in-hospital, 28-day, or 90-day mortality, or ICU or hospital length of stay. A significant difference was seen in median duration of therapeutic HC dose (i.e. 50 mg IV every 6 hours) between FC + HC and HC groups (53.3 vs. 36.3 hours; p=0.02). Significantly more patients in the FC + HC group met criteria for a gastrointestinal bleed: twice daily proton pump inhibitor (16 vs. 5 patients; p=0.01) and esophagogastroduodenoscopy (8 vs. 1 patient; p=0.03). There were no differences in hypernatremia, hypokalemia, hyperglycemia, or need for blood transfusions between groups.
CONCLUSION: The combination of fludrocortisone plus hydrocortisone versus hydrocortisone alone did not result in shorter time to reversal of septic shock. There were no differences in mortality between groups. Patients on fludrocortisone plus hydrocortisone may have a higher risk of gastrointestinal bleed. Future studies are needed to further evaluate this risk.

VIII B – CRITICAL CARE

PL VIII-8
EVALUATION OF ALCOHOL WITHDRAWAL MANAGEMENT AND PRESCRIBING PRACTICES IN THE TRAUMA-NEURO CRITICAL CARE AND MEDICAL INTENSIVE CARE UNITS. Mackenzie Piché, Logan Thibodeaux, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

PURPOSE: It is estimated that 15.1 million adults in the United States have an alcohol use disorder. During hospitalization, these patients may experience symptoms of acute alcohol withdrawal or delirium tremens (DT), potentially leading to an increased incidence of complications if not adequately managed. Studies have suggested that implementation of a symptom-triggered alcohol withdrawal protocol may decrease benzodiazepine usage, rates and duration of mechanical ventilation, and intensive care unit length of stay. The purpose of this study is to evaluate current practices in management of alcohol withdrawal in the intensive care unit (ICU).

METHODS: This study is a single-center, retrospective chart review designed to observe current prescribing habits in patients at risk for alcohol withdrawal syndrome (AWS) in the trauma-neuro critical care (TNCC) and medical intensive care units (MICU) at Our Lady of the Lake Regional Medical Center. Patients were included if they were at least eighteen years old, had a diagnosis of an alcohol use disorder or acute AWS, and were admitted to the aforementioned ICU’s at Our Lady of the Lake between April 1, 2017 and August 31, 2018. Exclusion criteria included an initial Glasgow Coma Score of less than nine, history of a seizure disorder unrelated to alcohol withdrawal, inability to communicate in English, or incarceration immediately prior to admission. The primary outcome was to assess benzodiazepine usage in patients at risk for acute AWS or at risk for AWS. Secondary outcomes included antipsychotic and dexmedetomidine usage, hospital and ICU length of stay, incidence of seizures, occurrence of DT, and rates and duration of mechanical ventilation. Data from this retrospective review will be used to identify the need for medical staff education and to assist in the implementation of a symptom-based approach to alcohol withdrawal patients.

RESULTS: Analysis in process, final data to be presented

CONCLUSION: Analysis in process, final data to be presented

PL VIII-9
EVALUATION OF PRESCRIBING PRACTICES OF HYPEROSMOLAR THERAPY IN ADULT PATIENTS WITH TRAUMATIC BRAIN INJURY. Christina Metrejean, Britney Mellor, Logan Thibodaux, Allen Joseph, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

PURPOSE: Traumatic brain injury (TBI) can be devastating to patient function. Hyperosmolar therapies including mannitol and/or hypertonic saline are guideline-recommended treatments. Although it is accepted that one or both of these therapies are appropriate treatment modalities, studies have not conclusively reported a superior agent or regimen. Currently at Our Lady of the Lake Regional Medical Center (OLOL), hyperosmolar therapies are prescribed by physician discretion. The purpose of this study was to evaluate the prescribing practices of physicians at OLOL as they relate to hyperosmolar agents in TBI and determine if there are regimen-based safety or adverse effects on adult patients admitted to the trauma and neurological critical care units.

METHODS: A single center, retrospective chart review compared adverse effects of prescribed hyperosmolar regimens on adult patients diagnosed with traumatic brain injury who were admitted to the trauma-neuro and neurological critical care units and received mannitol, hypertonic saline, or both. Data collected included basic demographic data (age and gender), patient weight, critical care unit days, Glasgow Coma Scale (GCS) scores on admission to the intensive care unit (ICU) and at discharge, serum creatinine values (with acute kidney injury [AKI] defined as a serum creatinine increase of greater than or equal to 0.5 in 48 hours), hyperosmolar therapy doses and infusion rates, duration of hyperosmolar therapy, serum sodium values, serum osmolality, goal serum osmolality if noted by a provider, and serum potassium values. Patients were excluded from the study if less than eighteen years of age at the time of admission, patients who underwent dialysis during admission, pregnant patients, and patients whose charts had incomplete information relevant to the project.

RESULTS: Pending final analysis.

CONCLUSION: Pending final analysis.

PL VIII-10
USE OF DEXMEDETOMIDINE AS MONOTHERAPY FOR THE MANAGEMENT OF ALCOHOL WITHDRAWAL SYNDROME IN PATIENTS WITH LIVER DISEASE. An Nguyen, Christina Chen, Sloka Manvi, JPS Health Network, Fort Worth, TX.

INTRODUCTION: Benzodiazepines (BZDs) are commonly used as first-line therapy in alcohol withdrawal syndrome (AWS). However, there is a growing concern regarding the possible association between the utilization of BZDs in patients with liver disease and development of hepatic encephalopathy. Several studies have investigated the use of dexmedetomidine (DEX) as an adjunct for the management of AWS in patients refractory to BZD therapy. Recent literature has shown the addition of DEX provides a BZD-sparing effect along with reducing the need for intubation and ICU length of stay (LOS). In the only retrospective cohort study to date that evaluated DEX as monotherapy, Crispo et al. found the occurrence of
respiratory failure requiring intubation was lower in the DEX group, but the results were not statistically significant. The authors concluded that DEX should be used with caution when utilized as monotherapy, owing to the lack of protective effects of seizure prevention. To our knowledge, no studies have been conducted to evaluate the use of DEX monotherapy for treatment of AWS specifically in patients with liver disease.

**PURPOSE:** To evaluate if DEX monotherapy compared to combination therapy with DEX and BZDs reduces ICU LOS, duration/need for mechanical ventilation and mortality in patients with liver disease.

**METHODS:** This is a retrospective electronic chart review, which included adult patients who were admitted to the ICU with a diagnosis of AWS and liver disease. Study outcomes included: a composite of need/duration of intubation and ICU LOS and individual endpoints as well as all-cause mortality, alcohol withdrawal induced seizures, medication related adverse events, incidence of hepatic encephalopathy, ability to achieve goal sedation, BZD use and readmission rates to ICU for AWS.

**RESULTS:** Data collection in process

**CONCLUSIONS:** To be determined

**PL VIII-11**

**EVALUATING THE MANAGEMENT OF PATIENTS RECOVERING FROM SEPTIC SHOCK: A RETROSPECTIVE BEFORE AND AFTER SHOCK PROTOCOL STUDY.** Joseph A. Oropeza; Lane Farrell; Vivek Kataria; Haala Rokadia; Ginger Tsai-Nguyen; Casey Morris; William Haden; Idrees Mogri; Ariel Modrykamien, Baylor University Medical Center, Dallas Texas.

**Background:** Septic Shock is a severe manifestation of hemodynamic compromise, resulting in life-threatening organ dysfunction caused by dysregulated systemic inflammatory and immune responses to microbiological invasion. Patients are typically resuscitated with crystalloids initially; however, a subset of patients with sepsis will remain hypotensive and continue to deteriorate necessitating use of vasopressor support. Septic shock remains a significant cause for medical intensive care unit admission and is associated with a mortality approaching fifty percent. Current evidence provides broad guidance, however, limited literature evaluating the use of an evidence-based protocol exists. The objective of this study is to compare vasopressor free days in patients managed per protocol to current standards of care.

**Methods:** The institutional review board has approved this study. A retrospective cohort study aimed to evaluate the utility of a protocolized approach of septic shock management. Adult patients were included if admitted to the medical intensive care unit with a diagnosis of septic shock requiring norepinephrine to maintain mean arterial pressure above 65 mm Hg. Patients were excluded if they were less than 18 years old, pregnant, or if care was actively withdrawn. The post-protocol group included patients between July 1, 2018 through December 31, 2018 and the pre-protocol group included patients between July 1, 2017 through December 1, 2017. The primary outcome of this study was vasopressor free days. Secondary outcomes include ICU length of stay, mortality, and time to lactate clearance. Protocol compliance was assessed using major check points on the septic shock algorithm including: timing of vasopressor initiation, addition of vitamin C protocol when procalcitonin was greater than 2 ng/mL, and initiation of dobutamine when a mixed venous saturation was less than 65%. Categorical data was analyzed using a Chi-square test, and continuous data using a two-tailed Student’s t-test. P-values less than 0.05 was considered the statistically significant threshold.

**Results:** pending

**Conclusion:** pending

**PL VIII-12**

**COMPARISON OF THE ADJUNCTIVE USE OF KETAMINE VERSUS STANDARD OF CARE IN SEDATION AND ANALGESIC MANAGEMENT IN PATIENTS RECEIVING VENO-VENOUS EXTRACORPOREAL MEMBRANE OXYGENATION (VV ECMO).** Honey Patel, Christine Parker, Omar Hernandez, Baylor University Medical Center, Dallas, TX.

**Background:** Extracorporeal membrane oxygenation (ECMO) is a treatment option for patients with severe respiratory or cardiac failure. Patients on VV ECMO may require mechanical ventilation and high doses of sedation and analgesia to provide adequate comfort. This patient population can be challenging to sedate due to the alterations in pharmacokinetic and pharmacodynamics properties of various pharmacologic agents and the ECMO circuit. Ketamine is a promising adjunctive sedative since it has hypnotic, analgesic, and amnesic properties. Its unique activity is a result of activity at a variety of receptors including antagonism of glutamate and N-methyl-D-aspartate (NMDA) as well as agonism of nociceptive opioid receptors. In comparison to other sedative agents, ketamine may be preferable due to its lack of respiratory depression and its ability to induce bronchodilation. In addition, it has the potential to improve hemodynamics through stimulation of the sympathomimetic pathway. Currently, there is a paucity of data assessing clinical outcomes in VV ECMO patients who receive ketamine in addition to standard of care sedative and analgesic therapy. The purpose of this study is to evaluate the adjunctive use of ketamine versus standard of care in sedation and analgesia management in patients receiving VV ECMO.

**Methods:** This study has been approved by the Institutional Review Board. A retrospective chart review was conducted from January 1, 2012 to June 30, 2018 at Baylor University Medical Center in the North Texas Dallas Division for adult patients 18 years and older who received a ketamine infusion during VV ECMO. The primary objective was to evaluate the sedative and analgesic requirements in VV ECMO patients receiving ketamine. Secondary objectives included incidence of delirium, duration of mechanical ventilation, intensive care unit length of stay, hospital length of stay, and hospital mortality. Appropriate parametric tests or non-parametric equivalent tests will be used for endpoint analysis. A p-value of less than 0.05 will indicate a statistically significant difference.

**Results:** Research in progress

**Conclusion:** Research in progress
**PL VIII-13**

**EFFECT OF DESMOPRESSIN AND HYPERTONIC SALINE VS HYPERTONIC SALINE ALONE ON LENGTH OF STAY IN CRITICALLY ILL PATIENTS WITH SEVERE HYponATREMIA.** Raymond G. Mattes, G. Christina Gutierrez, Sheila Habib, Kathleen Morneau, Rebecca L. Attridge. University Health System, South Texas Veterans Healthcare System, University of the Incarnate Word, Feik School of Pharmacy, San Antonio, TX.

**BACKGROUND:** Hyponatremia is the most common electrolyte disorder in hospitalized patients and has been associated with a longer length of stay. The optimal role of desmopressin (DDAVP) is still being debated, however, its general purpose is to reduce the rate of correction of plasma sodium levels by preventing free water diuresis. Due to a paucity of data, it is still unclear how the use of desmopressin may influence length of stay in the intensive care unit.

**PURPOSE:** Determine whether use of DDAVP with hypertonic saline affects length of stay in patients with profound hyponatremia admitted to the medical intensive care unit (MICU) compared to hypertonic saline alone.

**METHODS:** This is a retrospective, dual-center observational study of critically-ill patients admitted to the MICU with hyponatremia from 2006 to 2018. Patients will be included if they have a serum sodium $[\text{Na}^+] \leq 125 \text{ mEq/L}$, received hypertonic saline, and are 18 years or older. Patients will be grouped based on whether or not they received desmopressin as part of their hyponatremia management. Data will be collected via chart review and include length of stay, serum $[\text{Na}^+]$, contributing medications, contributing medical conditions, dose of desmopressin, volume status, treatment with hypotonic fluid, treatment with isotonic fluid, volume of hypertonic saline, rate of osmotic demyelination syndrome, desmopressin strategy, and desmopressin duration. The primary outcome is length of stay in MICU. Secondary outcomes include length of stay in hospital, average serum $[\text{Na}^+]$ in the 1st 24 hours, average serum $[\text{Na}^+]$ in the 2nd 24 hours, daily correction of serum Na, proportion corrected by $6-8 \text{ mEq/L}$ per 24h, proportion corrected by $\leq 18 \text{ mEq/L}$ in 48h, correction $> 12 \text{ mEq/L}$ in any 24 hour period, osmotic demyelination syndrome per Brain MRI, and in-hospital death. Subgroup analysis will be performed for the desmopressin dosing strategies of proactive, reactive, and rescue.

**RESULTS:** Pending data collection.

**CONCLUSIONS:** To be determined.

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**PL VIII-14**

**MODAFINIL FOR WAKEFULNESS IN THE NEUROCITICAL CARE UNIT.** Peyton Brooks Plummer, Yana Bukovskaya, Katherine Jennings, Kinsey Kowalski, Ochsner Medical Center, New Orleans, LA.

**PURPOSE:** Neurostimulants are utilized in traumatic brain injury patients to promote wakefulness; however, there is limited data available evaluating their use in patients with other types of neurological injuries. At Ochsner Medical Center, modafinil is prescribed to promote wakefulness in neurocritical care patients in hopes of accelerating recovery, reducing ventilator support, increasing participation with physical therapy, and decreasing time to discharge from the Intensive Care Unit (ICU). The purpose of this study is to assess the efficacy of modafinil in promoting wakefulness in neurocritical care patients.

**METHODS:** This retrospective, descriptive cohort study included adult patients admitted to the Neurocritical Care Unit from January 2013 to September 2018 who received modafinil for at least 72 hours without missing doses. The primary endpoint is an increase in wakefulness, which is defined as an increase in Glasgow Coma Score (GCS) of at least 3 points or greater. Secondary endpoints included wakefulness at 24, 48, and 72 hours, any change in GCS or Richmond Agitation and Sedation Scores (RASS), ICU length of stay, hospital length of stay, time on ventilatory support, discharge disposition, adverse drug effects, and mortality. Appropriate descriptive statistical analysis was performed to evaluate the study objectives as well as a cluster analysis for potential predictors of modafinil response.

**RESULTS:** Five hundred fifteen patients were screened, and 198 patients met inclusion for the primary analysis. Of the 198 patients; 97 (49%) were female and 101 (51%) were male. The average age of the study population was 68 years old (SD 14.5 years). The most prevalent primary neurologic illness was ischemic stroke (38%), followed by intracerebral hemorrhage (23%) and status epilepticus (13%). Seventy percent of patients were receiving mechanical ventilation at baseline. Fifty-eight percent of patients were receiving medications that were considered to cause drowsiness, with levetiracetam being the most common. The primary endpoint was met by 23 (12%) patients. The average hospital and ICU length of stay among all included patients was 31 and 25 days, respectively. Forty-three (27%) patients died during this inpatient encounter, with most remaining patients being discharged to either an LTAC or SNF. The primary cause of death among deceased patients was withdrawal of care. Incidence of adverse effects from modafinil were limited with 13 patients developing transaminitis, 2 patients with cardiac arrhythmias, and 1 patient with seizures. Further results and comparison of responders versus non-responders will be determined with completion of statistical analysis.

**CONCLUSION:** Conclusions to be presented following completion of statistical analysis.

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**VIIC – CRITICAL CARE / NUTRITIONAL SUPPORT / INFECTIOUS DISEASES/HIV**

**PL VIII-15**

**IMPACT OF IMPLEMENTING A PROCALCITONIN-GUIDED ALGORITHM TO AID A PHARMACIST-DRIVEN ANTIMICROBIAL STEWARDSHIP IN PATIENTS WITH SEPSIS AND/OR PNEUMONIA IN A COMMUNITY TEACHING HOSPITAL.** Juana Rivas, Amanda Needham, Andrea Jarzyniecki, Wadley Regional Medical Center, Texarkana, Texas.

**PURPOSE:** Procalcitonin (PCT) is a biomarker that rises in the presence of bacterial infection, and its level has a direct correlation with the severity of the infection. This allows the use of PCT to guide the clinical decision to initiate, optimize, or discontinue antibiotic therapy. PCT has gained interest in the research community mainly when dealing with patients with sepsis and/or pneumonia. Several algorithms have been
established using predefined procalcitonin ranges. These algorithms have shown to help decrease duration of antimicrobial therapy without affecting patient’s outcomes. Therefore, our pharmacy department has initiated a procalcitonin-guided algorithm to contribute in antimicrobial stewardship in patients diagnosed with sepsis and/or pneumonia.

**METHODOLOGY:** Our pharmacy department has developed a PCT algorithm that guides pharmacist to order baseline and follow-up PCT levels. The baseline level is ordered as an add-on lab to the order set obtained at admission. The follow-up PCT level is scheduled 3 days after the baseline to be drawn with other ordered labs. The clinical pharmacist will be responsible for assessing the follow-up PCT level as well as the clinical status of the patient to guide antimicrobial stewardship recommendations. The following PCT levels will be used to make recommendations, along with patient’s clinical criteria:

- **Pneumonia (CAP, HAP, VAP):** stop antibiotics when PCT ≤ 0.2 µg/L or when PCT decreases by ≥ 80% from peak if initial PCT was > 5 µg/L.
- **Sepsis:** stop antibiotics when PCT ≤ 0.5 µg/L or when PCT decreases by ≥ 80% from peak and patient is improving.

Retrospective data will be collected from June 2018 to December 2018. Patients who were diagnosed with pneumonia and/or sepsis will be identified using Cerner software. Laboratory orders will be reviewed and the presence of orders for baseline and follow-up PCT levels will be recorded for each patient. The percentage of patients having a baseline and a follow-up level will be calculated. Prospective data will be collected from January 2019 to February 2019 after the implementation of the pharmacist-driven procalcitonin-guided algorithm. Patients who were diagnosed with pneumonia and/or sepsis will be identified. Laboratory orders will be reviewed and the presence of PCT levels at baseline and follow-up PCT levels will be recorded for each patient. The percentage of patients having a baseline and a follow-up will be calculated. The retrospective data set will be compared to the prospective data set to assess the impact that pharmacist have in procalcitonin guided antimicrobial stewardship in patients with sepsis and/or pneumonia.

**RESULTS:** Data collection is still in progress.

**CONCLUSION:** To be formulated after data collection and data analysis are accomplished.

This has been associated with hepatic dysfunction and intestinal failure-associated liver disease, especially for patients requiring long-term therapy. MLE has more omega-3 long-chain polyunsaturated fatty acids (LC PUFA) which are less inflammatory than the omega-6 LC PUFAs found in SLE. The purpose of this study is to evaluate the effect of implementation of MLE versus previous use of SLE on bilirubin trend in pediatric and neonatal patients on parenteral nutrition.

**Methods:** This is a single-center retrospective chart review of neonatal and pediatric patients that received MLE or SLE during an inpatient stay from January 1, 2014 to January 31, 2018. After FDA approval of MLE in 2016, this institution implemented restriction criteria for its use. The primary outcome will be change in total bilirubin value while on lipid therapy. Secondary outcomes include development of IFALD (defined as two consecutive direct bilirubin (DB) levels greater than 2 mg/dL), the trend of other values (DB, AST, ALT, ALP, GGT, and triglycerides), and relevant clinical outcomes (retinopathy of prematurity requiring treatment, necrotizing enterocolitis, periventricular leukomalacia, intraventricular hemorrhage, and patent ductus arteriosus requiring treatment). Groups will be matched on age and lipid duration using propensity score matching. This study will require 97 patients per group to achieve 80% power to detect a mean 0.2 mg/dL difference in the primary outcome at an alpha level of 0.05. The primary outcome will be analyzed with repeated-measures analysis-of-variance. Categorical variables will be reported using the chi squared test or Fisher’s exact test. Continuous variables will be analyzed using a two-sample unpaired t test or Mann-Whitney U test. This study will be submitted to the local institutional review board for approval and data will be stored securely using REDCap software.

**Results:** To be presented

**Conclusions:** To be presented

**PL VIII-17**

**TOLERABILITY OF ENTERAL NUTRITION IN PATIENTS ON HIGH VERSUS LOW DOSE VASOPRESSORS.** Emily B. Welsh, Megan Anderson, Yeuju Lee. Memorial Hermann Hospital System, Houston, Texas.

**Purpose:** Enteral nutrition (EN) supports gut functional integrity, and reduces disease severity and complications. Initiation of nutrition support is recommended within the first 24 to 48 hours in critically ill patients. The 2016 ASPEN guideline recommends withholding EN in patients who are hemodynamically unstable and require vasopressor support. Despite the ASPEN guideline recommendation, consensus of EN initiation in patients who require vasopressor support remains unclear. Previous studies suggest the incidence of EN intolerance increases with doses of norepinephrine equivalents (NE) doses greater than 12.5 µg/min. The purpose of this study is to evaluate the tolerability of EN in patients who require NE equivalent doses greater than 15 µg/min.

**Methods:** A retrospective multi-center cohort study included patients ≥ 18 years old who received EN and vasopressors concurrently for at least two hours. Two cohorts were defined low dose as patients receiving NE equivalent doses <15 µg/min and high dose as patients receiving NE equivalents ≥ 15 µg/min. Patients were excluded if they were pregnant, received concomitant
pentobarbital or continuous paralytic infusion, had recent gastrointestinal (GI) surgery within 30 days of admission, or
admitting diagnosis of GI bleed or obstruction, intestinal ileus, gastroparesis, acute pancreatitis, peritonitis, abdominal sepsis, ischemic colitis, or esophageal rupture. The primary endpoint of this study was rate of EN intolerance while on vasopressors.

**RESULTS:** A total of 120 patients admitted to the ICU at Memorial Hermann Greater Heights, Southeast, and The Woodlands Medical Center were included in this analysis. Patients had similar baseline characteristics except for older age and higher SAPSII scores in the high dose group. Patients in the high dose group did not have a statistically higher rate of EN intolerance compared to the low dose group (28.3% vs. 20%). The median NE dose was 5 µg/min in the low dose group and 38 µg/min in the high dose group at the time of EN intolerance. Patients receiving higher doses of vasopressors had a higher in-house mortality rate (20% vs. 43.3%, p<0.005). The most common sign of intolerance was abdominal distention.

**CONCLUSIONS:** Patients receiving NE equivalent doses ≥ 15 µg/min were not associated with a higher rate of EN intolerance compared to NE equivalent doses < 15 µg/min.

**PL VIII-18**

**USE OF VITAMIN C, HYDROCORTISONE, AND THIAMINE FOR SEVERE SEPSIS AND SEPTIC SHOCK AT A COMMUNITY HOSPITAL: AN INTERIM ANALYSIS.** David C. Varghese, Julin Mathew. Memorial Hermann Hospital System, Houston, TX.

**PURPOSE:** Sepsis demonstrates a high mortality especially in critical ill patients, calling for the improvement of care for survival. Studies have demonstrated independently or in some combinations the use of hydrocortisone, ascorbic acid, and thiamine in helping achieve hemodynamic stability, reduce duration of mechanical ventilation and hospital length of stay. A small retrospective, single center, before-after study published in 2017 from Marik et al. compared the clinical course and outcomes of patients with severe sepsis who did and did not receive intravenous ascorbic acid 1500 mg IV Q6H, hydrocortisone 50 mg IV Q6H, and thiamine 200 mg IV Q12H (vitamin C protocol). The use of this vitamin C protocol showed a significant decrease in hospital mortality, and time on vasopressors. The purpose of our study is to determine the effect of this regimen on hospital survival of severe sepsis and septic shock patients in a community hospital.

**METHODS:** This retrospective, single center, case control before-after study included adults patients with severe sepsis and septic shock admitted to an intensive care or intermediate care unit. Patients in the post-vitamin C group had to also have a procalcitonin level ≥ 2 ng/mL and have received at least one dose of the vitamin C protocol. Patients were excluded if they were pregnant or designated as comfort care. The primary outcome is to determine all-cause in-hospital mortality. Secondary outcomes include the time on vasopressors, length of stay in intensive care unit and hospital, and the need for renal replacement therapy (RRT). We calculated a sample size of 500 patients to detect an absolute difference of 10% in mortality with an alpha of 0.05 with 80% power.

**RESULTS:** Total of 113 in the pre-vitamin C group and 115 patients in the post-vitamin C group were included for interim analysis. Baseline characteristics were similar, except patients in the pre-vitamin C group had significantly lower APACHE II scores (17 vs. 23, p < 0.05) and vasopressor requirements (53% vs. 70%, p < 0.05) compared to the post-vitamin C group. The hospital mortality was 28.3% in the pre-vitamin C group versus 19.1% in the post-vitamin C group (p = 0.103). Time on vasopressors, intensive care unit and hospital length of stay, and the need for RRT was not statistically different between both groups.

**CONCLUSION:** Further data collection and analysis will take place to meet power and determine statistical significance.

**PL VIII-19**

**IMPROVEMENT OF ORDER VERIFICATION TIME FOR FIRST-DOSE ANTIBIOTIC ORDERS.** Andrei Zidaru, Eileen Tharp, and Brian Gulbis, Memorial Hermann-Texas Medical Center.

**Purpose:** At Memorial Hermann-Texas Medical Center, the goal to first dose antibiotic administration is within 60 minutes of pharmacy verification. The recommended time frame of antibiotic verification is 20 minutes with a target goal of 80% compliance. Compliance is currently at 70-75%. The purpose of this quality improvement project is to investigate barriers to timely verification of first dose antibiotics and implement interventions to increase compliance.

**Methods:** This project evaluated first-dose antibiotic orders from August 1, 2018 – December 31, 2018. Antibiotic orders were excluded if they were not scheduled to begin within 1 hour from the time of ordering or were administered in a different hospital unit than where they were ordered. Baseline data was collected by interviewing the pharmacist who verified the antibiotic order within 24 hours. Data included reported barriers to verifying antibiotic orders within 20 minutes, order characteristics, orders in queue at the time of verification, and distribution of order verification times among fallout orders.

**Results:** Baseline data collection included 100 first-dose antibiotic orders (50 fallouts and 50 orders meeting target) were evaluated. The median time to verification was 35 and 11 minutes for fallouts and target orders, respectively. Approximately 18% of fallouts occurred during the night shift. The top barriers for fallout orders were clarification needed, awaiting labs, and missing information. Based on the incidence of barriers a plan has been developed to try and improve verification times. Following a pilot period, post-intervention target goal compliance will be evaluated.

**Conclusion:** Study is in progress.
IXA – PALLIATIVE CARE/PAIN MANAGEMENT

PL IX-1
IMPACT OF INTRAVENOUS ACETAMINOPHEN ON PAIN MANAGEMENT IN PATIENTS UNDERGOING BARIATRIC SURGERY. Ballard Saul, Amber Elliott, Karen Lemley, Tina Ou, Ronald Hall., BSA Health System, Amarillo, TX.

PURPOSE: The primary goal of this study is to evaluate the clinical effects of using intravenous acetaminophen for patients undergoing bariatric surgery, specifically morphine equivalents. Secondary outcomes to be assessed include pain scores, length of stay, and incidence of adverse effects.

METHODS: This is a retrospective cohort study of patients who underwent bariatric surgery at BSA Health System. Patients were identified based on a medical record query to identify all patients undergoing bariatric surgery between 1/1/18 and 9/30/18. Inclusion criteria, exclusion criteria, and data collection were performed through review of the patient’s medical chart. Inclusion criteria included patients undergoing surgery between 1/1/18 and 9/30/18 and being of at least 18 years of age. Exclusion criteria included patients over the age of 89, having a documented allergy to acetaminophen, or having a documented allergy to an opioid.

RESULTS: A total of 169 patients were identified for screening. Results are pending data analysis.

CONCLUSION: In process

PL IX-2
THE EFFECTS OF PHARMACIST EDUCATION ON CHRONIC OPIOID USE IN PATIENTS WITH A NEW START OPIOID PRESCRIPTION. Sena Z. Avila, John Hoying, Cynthia Bartha, West Texas VA Health Care System, Big Spring, TX.

PURPOSE: To determine the impact of additional pharmacist education on the development of chronic opioid use.

METHODS: A Structured Query Language (SQL) report of Veterans enrolled at the West Texas VA Health Care System was obtained to identify opioid naïve patients (no opioid use in the past nine months since August 2017) who received new order of opioid therapy. Veterans were contacted via telephone by the Pain Clinical Pharmacy Specialist for additional counseling on the risks of chronic opioid use. After a minimum of three months, a retrospective chart review was performed on the Veterans who newly started on opioid therapy. The rate of continued opioid use was compared between the group that received education and the group that was unable to receive additional education.

RESULTS: A total of 365 Veterans were newly started on opioid therapy from August 2017 to October 2018. Most patients (n=362, 99%) were older than 30 years old. Approximately 81% of patients who received opioid education did not continue opioid therapy beyond 90 days, while 75% of patients who did not receive opioid education did not continue opioid therapy beyond 90 days. Using Chi Square test, the difference between the two groups was not statistically significant (p= 0.203). The number of patients who received opioid education was 233, while the number of patients who did not was 132 because their contact information was not updated or they did not return the pharmacist phone call. Using an additional non-opioid analgesic to treat the pain was also not statistically significant (p=0.535).

CONCLUSION: There was no statistical difference between the group that received additional pharmacist education and the group that was unable to receive additional pharmacist education. A multitude of other initiatives directed towards preventing chronic opioid use at the West Texas VA Health Care System are likely to have impacted the results. Pharmacist education on opioid use was likely beneficial based on patient’s appreciation and positive feedback. However, it would be difficult to determine the effect of pharmacist intervention due to other factors that may have influenced chronic opioid use.

PL IX-3
THE SUCCESS RATE OF PHARMACIST ASSISTED OPIOID TAPER AT THE CENTRAL TEXAS VETERANS HEALTH CARE SYSTEM. Haemy Chung, Geeta A. Maggu, Central Texas Veterans Health Care System, Temple, Texas.

BACKGROUND: In order to battle the Opioid Epidemic declared by the U.S. Surgeon General, the Comprehensive Addiction and Recovery Act (CARA) was passed in 2016 to achieve a system-wide implementation of the U.S. Department of Veterans Affairs’ Opioid Safety Initiative. With support from CARA and local leadership, the Central Texas Veterans Health Care System established pharmacist operated pain management clinics, which offers opioid taper assistance among various other services.

PURPOSE: To evaluate the success rate of pharmacist assisted opioid tapers at the Central Texas Veterans Health Care System through the pharmacist operated pain management clinics for quality improvement.

METHODS: A list of patients seen in pharmacist run pain management clinics between January 2, 2017 and June 30, 2018 with at least one prescription of opioids will be compiled using SQL server management tool using the CPRS (VA electronic medical records software) note titles and location coding linked to respective pain clinics and prescription history. Of the list generated, CPRS chart review will be conducted to determine whether an opioid taper has been initiated. Once identified, each patient’s CPRS profile will be utilized to collect characteristics at start of opioid taper (name, strength, formulation, dose), how long that patient has been on opioid therapy, whether patient is on a benzodiazepine, whether mental health clinic was consulted during the taper, and what pharmacological and non-pharmacological treatment were utilized for the taper. Additional information such as morphine equivalent dose per day at the start and end of the taper period will be collected as well. The patients’ opioid taper status from initiation to completion (6 months since initiation) will be monitored to analyze whether a successful taper has been achieved.

RESULTS: Data collection and analysis in progress.

CONCLUSION: Conclusion to be presented following completion of data collection and analysis.
PREVALENCE OF LONG TERM OPIOID DEPENDENCE IN OPIOID NAÏVE PATIENTS RECEIVING OPIOID INFUSIONS FOR ANALGESIA IN THE INTENSIVE CARE UNIT SETTING. 
Mohammad Qasim Adil1, Austin De La Cruz1,2, Matthew A. Wanat1,2, Michael E. DeBakey VA Medical Center, Houston, Texas1; University of Houston College of Pharmacy2.

PURPOSE: The use of opioids for acute and chronic pain management remains a cornerstone of both inpatient and outpatient medical practice. However, in recent times, an increased dependence on opioids has led to inappropriate prescribing, which has caused an increase in accidental deaths from opioid use. The purpose of this study was to determine the prevalence of chronic opioid dependence in previously opioid naïve patients who received opioids for analgesia while in the intensive care unit.

METHODS: A retrospective chart review was conducted to include patients between August and December 2017 who were admitted to the intensive care unit and were treated with a continuous opioid infusion for at least 12 consecutive hours. Patients were screened to confirm opioid naïve status prior to admission, defined as no more than 30 days of opioid prescription use in the prior 12 months. Baseline demographics, co-morbidities, and concurrent medications, including other analgesics or sedatives received were obtained from the electronic medical record. Prescription fill data from the health record will then be examined at three, six and twelve months post discharge to determine if patients were receiving chronic opioid treatment. Baseline data and prevalence of conversion to chronic opioid use will be analyzed using descriptive statistics. A logistic regression analysis was performed to assess the effect of patient characteristics and risk factor on converting to chronic opioid use.

RESULTS: A total of 330 charts were reviewed, with 118 patients meeting inclusion/exclusion criteria. All patients received fentanyl as their opioid infusion, for a median time of 35 hours (IQR 18.8-64.7 hours). The prevalence of patients receiving opioids post discharge was 76.3% (90/118) at 3 months, 19.5% (23/118) at 6 months and 7.6% (9/118) at 12 months. Several different factors impacted opioid use at 3 months, including ICU location (OR 3.9, 95% CI 1.73-8.75, p< 0.001) and being a surgical patient (OR 7.77, 95% CI 3.26-18.56, p < 0.0001). At 6 and 12 months, no risk factors were found to increase risk of chronic opioid use.

CONCLUSION: Administration of opioids for analgesia and sedation in the intensive care unit did not increase long-term rates of opioid use in previously opioid naïve patients. The prevalence of chronic opioid further use decreased at 6 and 12 months compared to 3 months. Additional studies are needed to assess the impact pain management during hospitalization has upon chronic opioid use disorder.
PL IX-6  
**KETOROLAC USE FOR MORE THAN 5 DAYS AND THE INCIDENCE OF ADVERSE EFFECTS.** Brittany Lines, Amanda Storer, Katherine Weigartz, Victoria Miller, Kelsey Trimble. Ochsner LSU Health Shreveport, Shreveport, LA.

**PURPOSE:** Ketorolac tromethamine is a nonsteroidal anti-inflammatory drug that works by blocking cyclooxygenase, thus blocking the production of thromboxane A2. Per the package insert, ketorolac tromethamine is only indicated for a short treatment duration of less than five days. Therefore, it is not indicated for chronic pain use. However, in different healthcare systems, ketorolac has been used for a longer duration of time than is currently recommended. Ketorolac use, for any duration, is known to increase the risk of gastrointestinal bleeding and/or perforation of the stomach/intestines. The purpose of this study is to assess patients that had recent surgeries and received ketorolac for extended duration (longer than 5 days) and analyze the effect ketorolac has on both bleeding and renal function compared to patients that had recent surgeries and received ketorolac for the recommended duration of five days or less.

**METHODS:** Data will be retrospectively collected from Ochsner LSU Health Shreveport system electronic records between June 2013 and June 2018. Patients that do not meet inclusion criteria will be manually removed from the data collection. The rate of each adverse event, including both bleeding events and acute kidney injuries, will be calculated after all the data is collected given the specified duration. The rate of adverse event will be compared between the two patient populations analyzed: the control group (5-day duration or less) and the study group (longer than 5-day duration). After screening for study group inclusion, patients in the control group were randomized in a 1:1 ratio for data collection and analysis.

**RESULTS:** From June 2013 to June 2018, 2,575 patients received ketorolac after surgery. Up to 100 patients will be included in each study group. Data collection and analysis is ongoing and will be presented at Alcalde conference.

**CONCLUSIONS:** The results from the statistical analysis are still pending and will be presented at Alcalde conference.

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PL IX-7  
**IMPACT OF MULTIMODAL PAIN MANAGEMENT ON SICKLE CELL PATIENTS WITH ACUTE PAIN CRISIS.** Stephanie J. Dantimo, Chi Pham-Peyton, Memorial Hermann Memorial City Medical Center, Houston, TX.

**PURPOSE:** Acute vaso-occlusive pain crises are the leading cause of emergency room visits and hospitalizations in sickle cell patients. Currently, studies regarding optimal pain management techniques in this patient population are lacking. Our institution plans to update our current sickle cell management process in the near future, and this study will provide useful information regarding the effects of multimodal pain therapies on sickle cell patients. The main purpose of this study is to assess the impact of multimodal pain management on length of stay and 30-day readmission rates for sickle cell patients with acute pain crisis.

**METHODS:** This is a retrospective chart review of adult sickle cell patients admitted to Memorial Hermann Memorial City Medical Center between January 2013 and September 2018. After eligibility screening, patients will be classified as either having received scheduled multimodal pain therapy within 48 hours of floor admission or not. Length of stay, 30-day readmission rates, pain scores, and pharmacist pain consults will be compared between the two groups. Data to be collected includes patient demographics, labs, pain management regimens, and adjunctive therapies.

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

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

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IXB – EMERGENCY MEDICINE

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PL IX-8  
**EVALUATION OF BARCODE MEDICATION ADMINISTRATION AND COMPUTERIZED PRESCRIBER ORDER ENTRY AT A VETERAN AFFAIRS’ EMERGENCY DEPARTMENT.** Olivia M. Collado, Nathan Fewel, Central Texas Veterans Health Care System, Temple, Texas.

**Purpose:** Barcode medication administration (BCMA) and computerized prescriber order entry (CPOE) have been shown to decrease medication administration errors. Although commonly used in hospital wards, the technology is less commonly found in acute care areas like the emergency department (ED). In December 2017, BCMA and CPOE were implemented at the Veteran Affairs’ emergency department. The purpose of this quality improvement projects is to 1) determine the utilization rate of CPOE and BCMA in the ED and 2) evaluate instances when CPOE and BCMA were not used to see if any improvements are needed to improve usage.

**Methods:** A sample of 200 patients who visited the ED from May 1, 2018 to October 31, 2018 were reviewed. Inclusion criteria include patients who received at least one medication in the ED as documented with BCMA or a progress note in the patient’s medical chart. Exclusion criteria include patients who did not receive a medication in the ED during the project time period. Patients were chosen at random. Data was collected regarding number of ED visits per patient, number of medications administered in the ED with or without BCMA per patient, and any reason for not using BCMA. Education will be provided to ED providers and nurses on results of the study.

**Results:** 200 unique patients were collected averaged 1.80 ED visits per patient, and 3.42 ED orders per patients, ranging from 1-20 orders per patient. Majority ED orders prescribed by drug class include pain medications (39%) and intravenous fluids (16%). The more frequent routes of administration of ED orders include IV infusion (36%), IV push (19%), and intramuscular (18%). The percent utilization of BCMA was 93% with 48 orders not given by BCMA. Reasons for not utilizing BCMA include: unknown (31%), emergency severity index (ESI) ≤ 2 (29%), doctor gave verbal order (15%), nurse bypassed BCMA (15%), orders placed before transfer (8%), and problems with scanning (2%).

**Conclusion:** BCMA was utilized for 93% of medications administered in the ED. When BCMA was not used, the reasons were often unclear or patients needed emergent treatment. A modest improvement in BCMA utilization can
probably be achieved by continuing education for the ED staff.

**PL IX-9**
**EVALUATION OF FOUR-FACTOR PROTHROMBIN COMPLEX CONCENTRATE (4F-PCC) FOR INTRACRANIAL HEMORRHAGE AT BAPTIST HEALTH SYSTEM.** Merissa De La Garza, Lauren Hernandez, Kevin Purcell, Baptist Health System, San Antonio, Texas.

**Background:** Kcentra is a 4-Factor Prothrombin Complex Concentrate (4F-PCC) that is FDA approved for the urgent reversal of warfarin in patients with acute major bleeding. Baptist Health System (BHS) created a protocol using the Guidelines for the Reversal of Antithrombotics in Intracranial Hemorrhage (ICH). The protocol covers reversal of warfarin and Factor Xa inhibitors. The guidelines recommend the use of 4F-PCC and vitamin K 10 mg IV for reversal of warfarin and 4F-PCC 50 units/kg for reversal of Factor Xa inhibitors.

**Objective:** To evaluate the use of 4F-PCC at BHS and assess compliance with the “BHS Intracranial Hemorrhage Emergency Reversal Orders of Warfarin and Novel Oral Anticoagulants” protocol.

**Methods:** Patients were identified through a medical record search for patients greater than or equal to 18 years old who received 4F-PCC at BHS from January 1, 2018 to December 31, 2018. Patient demographics, 4F-PCC indication and dose, INR, vitamin K usage and outcomes were recorded.

**Results:** Forty-five of the eighty-four patients that received 4F-PCC had a diagnosis of ICH. Warfarin was the most common anticoagulant reversed (42%), followed by apixaban (33%). Twelve of fifteen doses of 4F-PCC were appropriate for reversal of warfarin. Only 53% of patients receiving 4F-PCC for warfarin reversal received the recommended dose of vitamin K; 4 warfarin patients received no vitamin K.

**Conclusion:** The results suggest that pharmacists and physicians may benefit from education on the protocol. Creating a 4F-PCC order set would be beneficial to improve physician compliance and limit inappropriate uses.

**PL IX-10**
**EMERGENCY DEPARTMENT MANAGEMENT OF ATRIAL FIBRILLATION/FLUTTER WITH RAPID VENTRICULAR RESPONSE USING INTRAVENOUS DILTIAZEM.** Gregory Pon, Brittany Pelsue, Brian Gulbis, Memorial Hermann – Texas Medical Center, Houston, Texas.

**Background:** Atrial fibrillation (AF) and atrial flutter (AFL) are common supraventricular arrhythmias that present to the emergency department with symptoms of fatigue, palpitations, dyspnea, hypotension, and syncope. If left untreated, complications include stroke, left ventricular dysfunction, heart failure and cardiovascular death. Currently institution-specific data has identified that many patients receiving diltiazem for atrial fibrillation or atrial flutter are given initial doses that exceed the recommended dose by more than 10 percent, resulting in hypotension in up to 27% of those patients.

**Purpose:** To evaluate causes of higher than recommended diltiazem dosing for atrial fibrillation/flutter with rapid ventricular response in the emergency department (ED) setting, and assess and implement solutions to decrease the incidence of high diltiazem doses.

**Methods:** A retrospective chart review was conducted to gather background data regarding the incidence and appropriateness of intravenous (IV) diltiazem in the ED. Further background data was gathered by surveying ED providers and nurses to determine knowledge of appropriate IV diltiazem dosing and methods of ordering IV diltiazem to determine the causes of higher dosing. Based upon this information, two interventions were implemented, consisting of an electronic alert to use weight-based dosing when dispensed from the automated dispensing cabinets, and one-on-one nursing education. Data from before and after the intervention implementation was compared.

**Results:** An interim analysis of data over the first 2 months including 15 patients following the interventions showed that 80% of patients who received IV diltiazem for AF/AFL with RVR received appropriate weight-based dosing, compared to 32% of patients prior to the interventions. Out of the 15 patients collected there was 1 instance of hypotension, accounting for 7% of all patients post-intervention compared to 12% of patients prior to intervention.

**Conclusion:** Based upon the interim data following the interventions, the trend suggests an improvement in percent of patients receiving appropriate weight-based doses of diltiazem, with a potential decrease in the incidence of hypotension.

**PL IX-11**
**EVALUATION OF PRESCRIBER PRACTICES FOR THE MANAGEMENT OF SKIN AND SOFT TISSUE INFECTIONS IN THE EMERGENCY DEPARTMENTS OF A COMMUNITY HEALTH SYSTEM.** Noel Galang, Krupa Patel, Natalie Finch, Holly Ryan, Andrea Mora, Enock Anassi, Harris Health System, Houston, TX.

**PURPOSE:** Skin and soft tissue infections (SSTIs) are common presenting ailments for Emergency Department (ED) patients, while the emergence of antibiotic resistant microorganisms continue to challenge management. Treatment selections, antibiotic prescribing, and the decision for admission have shown variability, despite the most recent Infectious Diseases Society of America (IDSA) guidelines in 2014 for SSTIs. Furthermore, while patients may be classified as mild, moderate, or severe, provider interpretation of systemic signs of infection remain broad and blur the lines of severity diagnosis. There are financial implications associated with increased morbidity alongside inadequate or inappropriate treatment. The purpose of this study is to evaluate our prescriber practice and decision-making in order to positively affect patient disposition and treatment success.

**METHODS:** This study is a multicenter, retrospective chart review evaluating SSTI management in the Emergency Departments of two hospitals within Harris Health System. Epic, our system’s electronic medical record, was utilized to obtain a patient report of all patients diagnosed with ICD codes L00 through L08 for SSTIs between June 2016 and May 2018. Collection characteristics were defined by current IDSA practice guidelines on SSTIs, last updated in 2014. The primary objective will be to analyze prescriber adherence to the treatment recommendations of the IDSA.
guidelines within the ED. Secondary objectives include describing adverse events, rates of readmission, and costs of treatment therapy.

RESULTS: Pending data collection and statistical analysis.

CONCLUSION: Pending data collection and statistical analysis.

PL IX-12
IMPLEMENTATION OF A COLLABORATIVE PRACTICE AGREEMENT FOR BUG-DRUG MISMATCHES IN THE EMERGENCY DEPARTMENT. Rebecca Pratt Kessinger, Kimberly Putney, Lucretia C. Davis, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: To assess physician perceptions and buy-in regarding formal pharmacist-physician collaborative practice agreements (CPAs) for antimicrobial culture follow-up in the emergency department with the aim of designing and implementing such an agreement at our institution.

METHODS: Using a nine-question multiple choice electronic survey sent to 38 emergency department physicians, we assessed physician attitudes on collaborative practice, perception of pharmacists’ role and abilities, as well as the number of physicians that would be currently willing to sign a formal collaborative practice agreement. In the course of designing and implementing a CPA, we reached out to other hospitals around the country using an emergency medicine listserv for information on current practice and any obstacles faced.

RESULTS: The response rate of the electronic survey was 50% (19 responses). Most physicians responded in agreement with the statements “collaboration between pharmacists and physicians improves patient outcomes” and “pharmacists have adequate knowledge and training to provide drug therapy management” (100% and 84% respectively). Eighty-nine percent of physicians believe that engaging in a CPA would reduce the complications of antibiotic therapy. The greatest perceived barrier to implementation of a CPA is liability of physicians followed by liability of pharmacists. At the time of survey, 74% of physicians were ready to sign a formal CPA. In response to our emergency medicine listserv query about information on current practice and obstacles, we received feedback from five other emergency departments as well as one family medicine clinic.

CONCLUSION: The greatest perceived barriers to implementation of a CPA were physician and pharmacist liability. We plan to discuss this issue with our risk management department in order to respond to these concerns. With less than 100% physician buy-in, the logistics of a CPA has the potential to be more burdensome to pharmacists than the current procedure. We plan to address concerns on a case-by-case basis and refine our protocol document to ensure satisfaction of all regularly practicing emergency department physicians.

PL IX-13
EVALUATION OF ANTIBIOTIC ADMINISTRATION TIMING AND PATIENT OUTCOMES POST-IMPLEMENTATION OF CODE SEPSIS FOR SEPTIC SHOCK IN THE OCHSNER MEDICAL CENTER EMERGENCY DEPARTMENT. May Ly, Cerinda Morales, Steven Lee, W. Ashton Sloan, Ashley Shreves, Ochsner Medical Center, New Orleans, Louisiana.

PURPOSE: "Code Sepsis" was a process implemented to improve management of septic shock in the Ochsner Medical Center Emergency Department (OMC ED). A Code Sepsis is triggered for patients who present to the ED with either a systolic blood pressure less than 90 mmHg or lactate is greater than or equal to 4 millimoles per liter due to a suspected infection. The goal is to have antibiotics ordered within 15 minutes and administered to the patient within 60 minutes. The objective of this study is to evaluate the timing of antibiotic administration and outcomes of patients with septic shock who present to the OMC ED before and after implementing Code Sepsis process.

METHODS: Single-center, retrospective, cohort study comparing the timing of antibiotic administration from sepsis time zero before and after the implementation of the Code Sepsis protocol. ED admissions from March 8, 2017 to December 8, 2017 and March 8, 2018 to December 8, 2018 were included. Secondary endpoints include length of hospitalization, percentage of mortality at 30 and 60 days, percentage of readmission at 30 days, and percentage of patients requiring intensive care unit admission, vasopressor administration, mechanical ventilation, or renal replacement therapy. Categorical measures are presented as frequencies and percentages and are compared between groups using chi-squared tests or Fisher's exact tests where appropriate. Continuous measures with approximately normal distributions are presented as means and standard deviations and between-group comparisons are carried out via two-sample t-tests. Continuous measure representing time are presented as medians and ranges and between-group comparisons are evaluated using non-parametric Wilcoxon rank-sum tests.

RESULTS: In progress

CONCLUSION: In progress

IXC – EMERGENCY MEDICINE

PL IX-14
RATE CONTROL WITH INTRAVENOUS DILTIAZEM, METOPROLOL AND VERAPAMIL IN ACUTE ATRIAL FIBRILLATION WITH RAPID VENTRICULAR RATE. Tia Medeiros, Vi Bui, Young Ran Lee, Valeria Perez, Nicole Asonganyi, Susie Park, Hendrick Medical Center & Texas Tech University School of Pharmacy, Abilene, TX.

PURPOSE: Diltiazem is one of the preferred agents for rate control in acute atrial fibrillation due to its quick onset, minimal side effect profile, and low cost. However, due to intermittent shortage of intravenous diltiazem since February 2018, there has been an increase in utilization of intravenous metoprolol and verapamil. This study investigates effect of intravenous diltiazem, metoprolol, and
verapamil on rate control in patients with acute atrial fibrillation with rapid ventricular rate.

**METHODS:** This study is a retrospective, single-center, cohort study conducted in patients receiving intravenous diltiazem, metoprolol, or verapamil for acute atrial fibrillation. Patients with acute atrial fibrillation will be identified by International Classification of Diseases diagnosis codes recorded in their electronic medical record. Patients will be assigned to either the control group (diltiazem) or intervention group one (metoprolol) or intervention group two (verapamil) based on the received rate control agent. Data collection includes demographic information, baseline characteristics, vitals, treatment duration, names and doses of acute rate control agent, length of hospital stay, and mortality. The primary outcome is incidence of patients who achieved ventricular rate control less than 100 beats per minute within one hour of treatment. Secondary outcomes include time to achieve ventricular rate less than 100 beats per minute, heart rate at 30 minutes and 1 hour after administration, bradycardia and hypotension after administration, requirement of other rate control agent(s), inpatient admission, length of stay, and mortality. Chi-square or Fisher’s exact test will be used for nominal data, while one-way ANOVA or Kruskal-Wallis test will be used for continuous data.

**RESULTS:** Pending data collection and statistical analysis.

**CONCLUSION:** Pending data collection and statistical analysis.

**PL IX-15**

**SAFETY AND EFFICACY OF FIXED DOSE KCENTRA PROTOCOL.** Ike Oguejiofor, Ronald Hall, Kevin Fitzpatrick, Joshua Sanchez, Jiffy Philip, BSA Health System, Amarillo, TX.

**PURPOSE:** To determine whether a fixed dose Kcentra regimen provides similar efficacy to the standard dosing Kcentra regimen. Most guidelines recommend 4 factor prothrombin complex concentrate (4F-PCC) for emergent INR reversal in the setting of major bleeding, but the optimal dose remains an area of active investigation. Kcentra, a 4F-PCC product, has a standard dose based on the patient’s INR at presentation and body weight in kilograms (kg). The dose ranges from 25 to 50 units per kilogram of body weight with a maximum dose specified for each presenting INR range based on a 100 kg maximum. However, the manufacturers of Kcentra did not complete dose-finding studies as part of the FDA approval process. There have been a handful of past studies, which have examined the use of fixed-dosed Kcentra in order to conserve resources, decrease costs, and potentially decrease thromboembolic risk due to excessive doses.

**METHODS:** This research is an observational retrospective chart review of the electronic medical records of patients presenting to the emergency department or hospitalized in a 400+ bed, teaching hospital in Amarillo, Texas. Patients who presented to BSA hospital with major bleeding while on anticoagulant therapy from January 2018 to January 2019 that received four-factor prothrombin complex will be analyzed. This period of time was chosen due to availability of electronic records at the hospital. Data will be separated based on whether fixed dose or standard dose of Kcentra was used. The primary objective of this study is to determine the safety and effectiveness of a fixed dose Kcentra protocol and this will be achieved through analysis of several primary endpoints such as INR after administration of Kcentra, total amount of Kcentra exposure, number of additional Kcentra doses administered, and hospice or death outcome. A secondary objective of this study is to determine cost savings of a fixed dose Kcentra protocol and this will be achieved through analysis of the total cost of Kcentra used.

**RESULTS:** Pending

**CONCLUSION:** Pending

**PL IX-16**

**EVALUATING PROTHROMBIN COMPLEX CONCENTRATE (PCC) DOOR TO ADMINISTRATION TIME IN INTRACRANIAL HEMORRHAGE PATIENTS IN THE EMERGENCY DEPARTMENT.** Tania Joakim, Kristi Carter, Michael Olmos, Ishwara Sankara, William Witham, Texas Health Harris Methodist Fort Worth, Fort Worth, Texas.

**PURPOSE:** Vitamin K antagonists and factor Xa inhibitors remain the standard of treatment for most patients with atrial fibrillation or venous thromboembolisms, but they put patients at risk for Anticoagulant Associated Intracranial Hemorrhages (AAICH). Prothrombin complex concentrate (PCC) can be used to reverse vitamin K antagonist and factor Xa inhibitor effects in patients with AAICH. At Texas Health Harris Methodist Fort Worth (THFW), PCC product was moved from the main pharmacy to emergency department (ED) automated dispensing cabinet to allow for bedside preparation by the ED pharmacist and improve patient outcomes. The purpose of this review is to evaluate the door-to-needle time and patient outcomes after moving PCC product to the ED.

**METHODS:** This retrospective review utilizes the electronic medical records to identify patients with intracranial hemorrhages who were on a vitamin K antagonist or factor Xa inhibitor and received PCC in the THFW ED between June 2016 and June 2018. Patients were excluded if they received PCC between 2300 and 0700 when pharmacists are not present in the ED. The PCC became available in the ED in June 2017. Patients who received PCC before June 2017 are in the control group (pre-protocol) and patients who received PCC after June 2017 are in the post-protocol treatment group. The primary outcome is PCC door-to-needle time, and the secondary outcomes are hematoma expansion, mortality and PCC order-to-needle time. Hematoma expansion is defined as an increase in bleeding of 33% or more, and CT scans will be interpreted by a neurocritical care physician. Safety assessments include thromboembolic events such as myocardial infarctions, strokes, and venous thromboembolisms. This study was approved by the Institutional Review Board.

**RESULTS:** A total of 138 intracranial hemorrhage patients were included in the preliminary analysis with a median age of 79. Prior to admission, 72 (52.2%) patients were taking warfarin, 42 (30.4%) patients were taking apixaban, 23 (16.7%) were taking rivaroxaban, and 1 (0.7%) was taking edoxaban. Door-to-administration time was 138 minutes in the control group and 103 minutes in the treatment group (P=0.017). Order-to-administration time was 39 minutes in the control group and 19 minutes in the treatment group (p<0.001). There was no significant difference in inpatient mortality (19% vs 23%, p=0.66). The remaining data collection and analysis is currently in progress.

**CONCLUSION:** Conclusions to be presented following completion of data collection and analysis.
PL IX-17
FIXED DOSE PROTHROMBIN COMPLEX CONCENTRATE VERSUS VARIABLE DOSING FOR THE EMERGENT REVERSAL OF WARFARIN IN A COMMUNITY HOSPITAL. Caitlin Reedholm, Merry Daniel, Jennifer Frawley., St. David’s South Austin Medical Center, Austin, TX.

PURPOSE: Prothrombin complex concentrate (PCC) is indicated for patients on warfarin who require anticoagulant reversal due to an acute major hemorrhage or the need for an urgent surgery or procedure. Per the manufacturer, the labeled dose of PCC is variable and based on the patient’s weight and international normalized ratio (INR). Due to recent literature, our facility has adopted fixed dose PCC instead of using the labeled variable dosing. The objective of this study is to evaluate whether fixed dose PCC is non-inferior to variable dose PCC for the emergent reversal of warfarin.

METHODS: The electronic medical records of the hospital will be used to identify patients who received PCC between April 1, 2016 and April 1, 2019. Patients over the age of 18 receiving treatment with warfarin will be included. Adults who received PCC for indications other than reversal of warfarin, those without pre-and post-treatment INR, and those who received vitamin K more than 4 hours prior to PCC administration will be excluded. Eligible patients will be divided into two groups based upon the dose of PCC received: fixed dose and variable dose. For the purposes of this study, fixed dose will be defined as 1500 units of PCC (or 1000 units for non-intracranial bleed under clinician discretion). The primary outcome is the proportion of patients who achieved the target INR of equal to or below 1.5. Secondary outcomes will include incidence of thrombotic events during hospitalization, time to PCC administration, administration of additional dose of PCC, length of stay, in-hospital mortality and cost savings. Patient charts will be reviewed for data including: demographics, pre- and post-treatment INR, indication for warfarin and reversal, need for repeat dosing, concomitant vitamin K use, length of stay and presence of new thrombotic complication prior to discharge. This study has obtained Institutional Review Board exemption status.

RESULTS/CONCLUSION: Pending data collection and statistical analysis

PL IX-18
IMPROVING OPIOID PRESCRIBING IN A CANCER INSTITUTION EMERGENCY CENTER. John Patrick G. Sanchez, Tami N. Johnson, Ahmed Elsayem, Sorayah Bourenane. The University of Texas MD Anderson Cancer Center, Houston TX.

PURPOSE: This quality improvement project aimed to decrease inappropriately prescribed opioids by 50% during emergency center (EC) pain management. With increased use of opioids to manage cancer pain, clinicians were educated to better understand the risks of inappropriate opioid therapy and improve pain management with opioids in cancer patients presenting with acute pain or pain crisis.

METHODS: Retrospective baseline data was collected on patients with a chief complaint of pain who were discharged from the EC to assess their pain management. Physicians and nurses were targeted for education. Physicians attended didactic lectures, nurses completed an online course, and an educational poster placed in the EC workroom. Post-educational intervention data was collected on patients that had a chief complaint of pain and were discharged from the EC when education was completed. Inappropriate prescribing was defined as no documented contraindication to oral therapy if only intravenous opioids were given or incorrect doses of opioids ordered based on either cancer pain guidelines for opioid naïve patients or 10-20% of the morphine equivalent daily dose (MEDD) for opioid non-nàïve patients. Patients were defined as opioid naïve if they were not on opioids at home and opioid non-naïve if they were. Secondary outcomes included achievement of patients’ personal pain goal and prescription monitoring program documentation.

RESULTS: From a preliminary sample of 32 patients, 20 patients were appropriately given oral medications as first line pain treatment. Additional data to be collected and analyzed.

CONCLUSIONS: Preliminary results show improved opioid prescribing based on patients’ opioid history. Conclusions subject to change.

PL IX-19
EVALUATION OF RENAL OUTCOMES IN EMERGENCY DEPARTMENT PATIENTS RECEIVING NORMAL SALINE (NS) VERSUS LACTATED RINGERS (LR) BOLUS FOR SEPSIS. Hasanthi Vallabhaneni, Jeena Jacob, Michelle K. House, Jared T. Gower, Theresa B. Yarger, Baylor Scott and White All Saints Medical Center, Fort Worth, TX.

PURPOSE: To evaluate whether administration of lactated ringers (LR) versus normal saline (NS) for a fluid bolus in the emergency department (ED) to provide early fluid resuscitation in septic patients improves renal outcomes. Emerging evidence suggests that using NS as the crystalloid of choice in fluid resuscitation is associated with hyperchloremia and impaired renal function in critically ill patients. Therefore, it is important for prescribers and pharmacists to evaluate the impact of fluid choice on patient outcomes.

METHODS: This study is a retrospective, multi-center, observational chart review that will use the electronic medical record (EMR) to identify patients who are 18 years or older and receive NS or LR 30 mL/kg bolus for sepsis from June-December 2018. Patients will be excluded from the study if they do not receive the appropriate crystalloid bolus, have end stage renal disease (ESRD) on chronic hemodialysis, or have baseline hyperchloremia (chloride greater than 110 mEq/L). The data collected will include patient demographics, past medical history, laboratory results, vital signs, initiation of renal replacement therapy (RRT), length of stay, mortality, volumes of LR or NS in the ED and after admission, vasopressor requirement, and concomitant use of nephrotoxic medications. The primary endpoint will be a renal composite of new onset RRT and/or acute kidney injury (AKI), with AKI defined per the 2012 KDIGO guidelines. The secondary endpoints will include new onset RRT, new onset AKI, hyperchloremia, hyperkalemia, and renal composite in patients with liver disease.

RESULTS: Retrospective data collection is in progress.

CONCLUSION: Pending following the completion of data collection and analysis.
XA – INFECTIOUS DISEASES/HIV

PL X-1
REDUCTION OF PNEUMONIA-ASSOCIATED HOSPITAL READMISSION WITH PHARMACIST-LED TELEHEALTH ANTIMICROBIAL STEWARDSHIP OUTREACH AT VETERANS AFFAIRS ACADEMIC TEACHING FACILITY.
Jaekyu Lee, Marcy Pilate, Andrew Hunter, Chester Ashong, Christina Pereira, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

PURPOSE: Readmissions and mortality rate due to pneumonia were significantly higher in Veterans Affairs (VA) hospitals than those of non-VA hospitals according to a joint study conducted in 2016 by the VA and the Centers for Medicare and Medicaid Services. The purpose of this pilot project is to determine whether outpatient antimicrobial stewardship provided by VA pharmacists can reduce community acquired pneumonia (CAP) readmission rates.

METHODS: Patients with CAP were prospectively contacted by telephone three to four days after discharge to assess their response to oral antibiotics from December 7, 2018 to February 7, 2019. Re-education and further referral to primary care provider were also provided as appropriate during the intervention. The readmission rate within 30 days after discharge was compared to the same period in 2017-2018.

RESULTS: A total of 10 patients were enrolled in the study period. The interim analysis shows that 1/10 (10%) of patients were readmitted within 30 days of discharge, compared to 1/9 (11.1%) from last year (p = 0.93). The readmission result for one patient is still pending since 30 days after discharge has not elapsed yet since discharge. The one patient who was readmitted could not be reached via telephone. All the patients who were successfully contacted were not readmitted within 30 days during the study period. 5 out of 10 patients (50%) were discharged with levofloxacin while the others received a 3rd generation cephalosporin, macrolide, or aminopenicillin. Re-education counselling and referral to primary provider or emergency department were provided to five patients. All patients, except one, received ≤ 7 total days of antibiotic treatment during their inpatient and outpatient course. 4 out of 8 patients (50%) who were screened for an expanded viral panel tested positive for respiratory viral diseases. Furthermore, 4 out of 9 patients showed growth of micro-organisms through their cultures (sputum and/or blood). However, it was also found that cultures were collected after administration of antibiotics in 4/9 (44%) patients.

CONCLUSION: Although a pharmacist-led telehealth intervention did not achieve statistical significance in CAP readmissions compared to the previous year, the interim data revealed areas of improvement in the standard process. More patients would need to be enrolled to draw definitive conclusion.

PL X-2
DURATION OF ANTIBIOTIC THERAPY FOR STAPHYLOCOCCUS AUREUS BACTEREMIA IN ONCOLOGY PATIENTS. Cara M. Clayton, Jon D. Herrington, Baylor Scott & White Medical Center – Temple, Temple, TX.

PURPOSE: To evaluate the duration of antibiotic therapy for Staphylococcus aureus bacteremia in oncology patients and identify if prescribing habits at Baylor Scott & White Medical Center – Temple are in line with recommendations from the Infectious Diseases Society of America (IDSA).

METHODS: Data from October 1, 2007 to August 31, 2018 was retrospectively collected from the institution’s electronic records. Patients were included if they were at least 18 years of age, had at least 1 positive S. aureus blood culture, and had active malignant disease. Patients were excluded if they had polymicrobial blood cultures or basal cell or squamous cell carcinoma as the only malignancy. The 2011 IDSA guideline for the treatment of methicillin-resistant S. aureus was used to determine appropriate antibiotic therapy duration.

RESULTS: More than 300 charts were reviewed, with 35 patients meeting the inclusion criteria. Of these 35 patients, 21 were diagnosed with uncomplicated bacteremia and 14 were diagnosed with complicated. The median duration of antibiotic therapy for uncomplicated bacteremia was 25 days (range 4 – 46) while the mean duration for complicated bacteremia was 44 days (range 3 – 55). Of the 21 patients diagnosed with uncomplicated bacteremia, 6 (28.57%) were treated for 14 days or less, while 15 (71.43%) were treated for greater than 14 days. None of the patients with uncomplicated bacteremia experienced relapse, regardless of duration of therapy.

CONCLUSION: At this institution, the majority of oncology patients diagnosed with uncomplicated S. aureus bacteremia were prescribed longer than IDSA recommended antibiotic courses.

PL X-3
IMPACT OF A PHARMACIST-LED ANTIBIOTIC TIME-OUT ON ANTIBIOTIC USE IN A COMMUNITY HOSPITAL. Norbert Rosario, Mario Varela, Alejandra Juarez, Valley Baptist Medical Center-Brownsville, Brownsville, TX.

PURPOSE: At our institution, prior to 2016, the antimicrobial stewardship efforts were primarily done by the two clinical pharmacy specialists. Interventions included IV to PO conversion, renal dose adjustment, and de-escalating or escalating antimicrobial therapies primarily in patients on restricted antimicrobial agents or those infected with multidrug resistant organisms. In February 2016, with the goal of expanding our antimicrobial stewardship program (ASP), an mPAGE notification system that created daily alerts when a patient had a positive culture or had been on antimicrobial therapy for at least 72 hours was implemented. Between February 2016 and January 2017, all of our pharmacists were trained by the clinical pharmacy specialists on the CDC core elements for stewardship efforts. Starting from February 2017 until now, our fully trained pharmacists have continued using the mPAGE notification system to assess all patients on antimicrobial therapies or with positive cultures on a daily basis, providing recommendations to physicians, and documenting their
interventions in our EMR. The purpose of this study is to examine the impact of our pharmacist-led antibiotic time-out implementation on the antibiotic use at our institution.

**METHODS:** Using data retrospectively collected from the institution’s electronic records, we conducted a quasi-experimental analysis of patients who received at least one dose of any pre-selected antimicrobial therapies with at least 30 patients during each selected study period. The comparator groups are broken into three 12 month periods starting from February 2015 to January 2018. The pre-interventional phase went from February 1st, 2015 to January 31st, 2016 with the clinical pharmacy specialists completed ASP efforts focusing on the restricted antimicrobial therapies including meropenem, ertapenem, linezolid, micafungin, colistin, daptomycin, tigecycline, and amphotericin. The training period went from February 1st, 2016 to January 31st, 2017, with the implementation of the mPAGE notification system and all pharmacists receiving training from the clinical pharmacy specialists on the CDC core elements for ASP. The full implementation period went from February 1st, 2017 to January 31st, 2018 with all fully trained pharmacists completing ASP efforts on a daily basis. The antimicrobial therapies included in this study were ampicillin/sulbactam, azithromycin, aztreonam, cefepime, ceftazidime, ceftiraxone, ciprofloxacin, clindamycin, fluconazole, levofloxacin, linezolid, meropenem, metronidazole, piperacillin/tazobactam, and vancomycin. The primary outcome was duration of therapy per 1000 patient days between the 3 study periods. The secondary outcomes include hospital length of stay and duration of therapy.

**RESULTS:** Pending

**CONCLUSION:** Pending

**PL X-4**
**RETROSPECTIVE CHART REVIEW EVALUATING ADHERENCE TO AND IMPACT OF AN INSTITUTIONAL ANTIMICROBIAL STEWARDSHIP POLICY REGARDING MEROPENEM UTILIZATION**

Jessie Cruz, Marguerite M. Monogue, Tiffeny T. Smith, University of Texas Southwestern Medical Center, Dallas, TX.

**PURPOSE:** Meropenem is a broad-spectrum antimicrobial indicated for the treatment of suspected or documented multidrug resistant organisms. Unnecessary and inappropriate use of meropenem can facilitate the development of antimicrobial resistance. The University of Texas Southwestern (UTSW) Medical Center’s meropenem utilization reduction policy was created by the antimicrobial stewardship program (ASP) in 2016, mandating an infectious diseases (ID) consult if there was no indication for meropenem after 72 hours based on prospective review by the ASP or clinical pharmacist. The study objectives are to describe adherence rates to the policy and assess the impact of the policy on antimicrobial stewardship metrics and clinical outcomes.

**METHODS:** This retrospective study included patients at least 18 years of age admitted to UTSW between February 1, 2018 to August 31, 2018, with an active order for meropenem for at least 72 hours. Patients were excluded from the study if they had documented culture data for which meropenem is appropriate, an allergy to penicillins or cephalosporins, a diagnosis of cystic fibrosis, were receiving meropenem prior to admission, or if an ID consult approved the use of meropenem prior to ASP review. The primary endpoint is the rate of adherence to the policy, defined as acceptance of an ASP or ID consult recommendation within 48 hours of review. Secondary endpoints include antimicrobial stewardship metrics, such as meropenem days of therapy (DOT), and clinical outcomes, such as length of stay (LOS), mortality, and incidence of C. difficile infection. The endpoints will be analyzed in two groups: “intervention” and “no intervention”. Intervention was defined as a recommendation made by a pharmacist to the primary team to discontinue or de-escalate therapy or obtain an ID consult.

**RESULTS:** Data from 274 patients were screened for inclusion. After excluding 176 patients, 98 patients were subdivided into two groups: 46 patients in the intervention group and 52 in the no intervention group. Among the intervention group, 59 recommendations were made by a pharmacist with an acceptance rate of 52.5%. Recommendations to modify therapy (i.e., de-escalate or discontinue) had higher rates of acceptance than obtaining an ID consult (51.9% vs. 36.8%, respectively). Seventeen patients were consulted by ID consult after ASP review. ID consult made 21 recommendations with an overall acceptance rate of 90.5%. There was no difference in the median DOT (6.8 vs. 7.3; P = 0.54) and LOS (19.8 vs. 20.4; P = 0.82) when comparing pharmacist intervention vs. no intervention groups. There were no differences in 30-day mortality (P = 0.29) and incidence of C. difficile infections (P = 0.098).

**CONCLUSION:** A pharmacist-driven ASP policy in a large, academic medical center was unable to demonstrate significant impact on antimicrobial stewardship metrics and clinical outcomes, likely due to limited adherence to the policy. However, no additional harm was seen, evidenced by similar rates in 30-day mortality. Further study is warranted to determine whether improved adherence to the policy is associated with a more significant impact on antimicrobial utilization and clinical outcomes.

**PL X-5**
**EVALUATING THE UNNECESSARY USE OF INTRAVENOUS BROAD-SPECTRUM ANTIBIOTICS FOR PRESUMED SEPSIS IN THE EMERGENCY DEPARTMENT.**

Esther Y. Bae, Tiffeny T. Smith, Marguerite L. Monogue, University of Texas Southwestern Medical Center, Dallas, TX.

**PURPOSE:** Early initiation of broad-spectrum antibiotics in sepsis is a cornerstone of sepsis management supported by national guidelines. However, stipulating a fixed timeline goal to the antibiotic initiation in suspected sepsis can likely contribute to generating unintended cases in which antibiotics are started in patients who do not subsequently have confirmed infection. Unnecessary antibiotic use can lead to significant adverse events including Clostridium difficile infections (CDI), nephrotoxicity, and antibiotic resistance. The purpose of this study is to quantify the frequency of unnecessary antibiotic use in suspected sepsis in the emergency department to demonstrate the need to optimize the use of broad-spectrum antibiotics.

**METHODS:** This retrospective study included adult patients who were admitted to the emergency department (ED) at University of Texas Southwestern Medical Center (UTSW) between January 2018 and June 2018 with suspected sepsis and received at least one dose of...
intravenous (IV) broad-spectrum antibiotic. Unnecessary use of antibiotic was defined as the prescribing and administering of antibiotics without confirmed and/or suspected bacterial infection. Results of microbiologic culture, radiographic exam, and physical exam were used as the objective evidence to determine either confirmed or suspected bacterial infection. The primary outcome of interest was the percentage of patients who had received IV broad-spectrum antibiotics in the ED unnecessarily. The secondary outcomes of interest included the rates of antibiotic-related adverse events such as acute kidney injury (AKI), CDI, and infection with multi-drug resistant organisms.

RESULTS: In progress.

CONCLUSION: In progress.

PL X-6
IMPACT OF PHARMACIST INTERVENTION IN RESPONSE TO AUTOMATED MOLECULAR DIAGNOSTIC TESTS OF BLOOD CULTURE

RESULTS. Lauren Baskett, Peter Colley, Mezgebe Berhe, Baylor University Medical Center – Dallas, TX.

Background
Rapid diagnostic tests can identify bacterial pathogens and genetic markers of resistance, which can aid in tailoring antimicrobial therapy prior to the return of final culture and susceptibility reports. In August of 2017 at our institution, pharmacists were incorporated into a new workflow which included review of these blood culture results in real time, assessment of antimicrobial therapy, and intervention to change therapy based on local susceptibility patterns. The purpose of this study is to determine whether the addition of a pharmacist in the blood culture review process reduces time to change in antimicrobial therapy.

Methods
This is a retrospective pre/post intervention study of patients with positive blood cultures analyzed by the Verigene (Nanosphere, Inc., Northbrook, IL) rapid diagnostic platform. Patients were included if they were at least 18 years of age, had positive blood cultures identified by Verigene, and were initiated on empiric antibiotics for suspected infection prior to test results. Patients were excluded if transitioned to hospice within 24 hours of test results, discharged prior to test results, refused antibiotics, or if more than one infectious process or organism was identified. Test results positive for coagulase negative staphylococci except S. lugdunensis were excluded. The pre-intervention group was selected from January 1, 2016 to July 31, 2016 and the post-intervention group was selected from January 1, 2018 to July 31, 2018. All Verigene results in the post-intervention group were reviewed by a pharmacist in real time, 24 hours a day, 7 days a week. The primary outcome of the study was time to intervention. Secondary outcomes were rates of Clostridium difficile infection within three months and inpatient mortality. Baseline demographic data included age, gender, source of infection and documented source control, and identified bacterial species and resistance markers. Additional data collected were surgical history within three months, history of diabetes, immunosuppression status, ICU length of stay, vasopressor use within 72 hours of Verigene results, and location at the time of Verigene results. Summary statistics were reported with the appropriate measures of central tendency. Appropriate parametric tests or non-parametric equivalent tests were also used. A p-value less than 0.05 indicated a statistically significant difference.

Results
Pending

Conclusion
Pending

PL X-7
RATE OF FLUOROQUINOLONE-RESISTANT INFECTIONS IN PATIENTS WITH ACUTE LEUKEMIA UNDERGOING INDUCTION CHEMOTHERAPY WITH OR WITHOUT LEVOFLOXACIN PROPHYLAXIS. Stacy Diao, Peter Colley, John E. Puryear, Mezgebe Berhe, Baylor University Medical Center, Dallas, TX.

PURPOSE: Bacterial infections in the setting of febrile neutropenia are a major cause of morbidity and mortality in acute leukemia patients undergoing chemotherapy. In concordance with the NCCN, IDSA, and ASCO guideline recommendations, it is common practice to provide levofloxacin prophylaxis during acute myeloid leukemia (AML) and acute promyelocytic leukemia (APL) induction chemotherapy. However, there remains a gap in the current medical literature in regards to the adverse consequences of levofloxacin prophylaxis. The purpose of this study is to evaluate infectious outcomes related to resistance in patients undergoing AML or APL induction chemotherapy that do or do not receive levofloxacin prophylaxis.

METHODS: This retrospective cohort study was approved by the Institutional Review Board. The electronic medical record was utilized to identify adult patients who were admitted to Baylor University Medical Center between January 1, 2015 and October 20, 2018 with a new diagnosis of either AML or APL. Patients were included if they received standard AML or APL induction chemotherapy for the first time and had a microbiologically documented infection during admission. These patients were classified into two groups—those that received concurrent levofloxacin prophylaxis or those that did not receive any antibacterial prophylaxis. The primary outcome was the presence of microbiologically documented infections due to fluoroquinolone-resistant organisms. Secondary outcomes included the presence of microbiologically documented infections due to other multidrug-resistant organisms, the rate of Clostridioides difficile infections, and all-cause mortality. The following key demographic data were collected: age, gender, body mass index, cancer diagnosis, induction chemotherapy regimen, history of antibiotic use within the past 90 days prior to admission, use of other antibiotics during admission, chemotherapy status at the time of admission, and comorbidities. Appropriate parametric tests or non-parametric equivalent tests will be utilized for analysis. Summary statistics will be reported with the appropriate measures of central tendency. A p-value of less than 0.05 will indicate a statistically significant difference between the two study groups.

RESULTS: Research in progress.

CONCLUSION: Research in progress.
XB – INFECTIOUS DISEASES/HIV

PL X-8

ASSESSMENT OF THE SAFETY AND EFFICACY OF COMBINATION ANTIFUNGAL THERAPY IN INVASIVE FUNGAL INFECTIONS IN CHILDREN.
Sara E. Brown, Karisma Patel, Paul Sue, Aimee Dassner
Children’s Health Children’s Medical Center Dallas, Dallas, TX.

PURPOSE: Invasive fungal infections in immunocompromised patients are associated with a high mortality rate, despite use of standard antifungal monotherapy. Due to the significant occurrence of therapy failure, providers have taken an interest in combining antifungal agents for the treatment of invasive fungal infections. The goal of combination antifungal therapy is to increase the fungicidal effect of the agents while possibly decreasing toxicity by allowing use of lower doses. However, there is limited clinical data supporting the use of combination antifungal agents in common fungal infections such as aspergillosis and mucormycosis. Available data is inconclusive and contradictory in some instances. The primary objective of this study is to assess the safety of antifungal combination therapy for treatment of invasive fungal infections in pediatric hematology and oncology patients. The secondary objectives are to evaluate the efficacy of combination antifungal therapy and to identify potential implications of azole-containing combination antifungal regimens on azole serum drug concentrations compared with azole monotherapy for the treatment of pediatric invasive fungal infections.

METHODS: This is a retrospective electronic chart review and case-control study that will be conducted on hematology and oncology pediatric patients with invasive fungal infections admitted to our institution between January 1, 2013 and December 31, 2017. All children with possible, probable, or proven invasive fungal infection who received combination antifungal therapy will be included. Patients included as cases will be identified by clinical, laboratory, and/or microbiologic data suggestive of invasive fungal disease who received treatment with two or more antifungal agents. Patients included as controls will be identified by clinical, laboratory, and/or microbiologic data suggestive of invasive fungal disease who received treatment with standard monotherapy. Cases will be matched to controls based on age, gender, weight, dosing of antifungal agents, route of administration of antifungal agents, and type of fungal infection. Descriptive analyses of categorical and continuous variables will be performed using proportions, frequencies, means, and confidence intervals. Statistical methods including chi-square test and t-test will be applied to the prognostic factors and outcomes, as appropriate to the variable’s level of measurement and distribution, to identify associations.

RESULTS: Retrospective data collection is ongoing. Analysis will be completed by March 2019. CONCLUSION: Conclusions will be presented upon completion of data collection.

PL X-9

EVALUATION OF THE IMPACT OF ACCURATELY ADMINISTERED ANTIBIOTICS ON LENGTH OF HOSPITAL STAY.
Enaefe Ziregbe, Andrea Jarzyniecki, Amanda Needham. Wadley Regional Medical Center, Texarkana, TX.

PURPOSE: Limited studies are currently published with regards to the impact of accurately administered antibiotics on the length of stay in hospitals in the USA. Although the Center for Medicare and Medicaid Services (CMS) lifted its “30-minute rule” which required all scheduled medications to be administered 30 minutes before or 30 minutes after the scheduled time, time-critical medications such as antibiotics need to be administered at the scheduled time. A failure to do so can lead to subtherapeutic concentrations and antimicrobial resistance which can result in an increase in the length of stay of patients in the hospital.

METHODS: A retrospective chart review of Wadley Regional Medical Center pediatric patients who received vancomycin, piperacillin/tazobactam, meropenem and levofloxacin in August 2018, September 2018, November 2018 and December 2018. This provides data two months prior to and two months after the clinical skills training held in October 2018 which provided nursing education on the importance of the timely administration of critically timed medications. The patient data collected will be deidentified and descriptive statistics will be used to characterize our study population. A t-test will be used to determine if there is a difference in the length of stay between the group with accurately administered antibiotics and the group whose antibiotics were not given within the desired time frame. Descriptive statistics will be used to determine if there is a difference between the timing of antibiotic administration prior to and after the clinical skills training and if there is a correlation with length of stay.

RESULTS: N/A

CONCLUSION: N/A

PL X-10

EFFECT OF PROCALCITONIN PROTOCOL ON DISCONTINUATION OF BROAD SPECTRUM ANTIBIOTICS IN SEPTIC AND SEPTIC SHOCK PATIENTS AT UNIVERSITY MEDICAL CENTER – NEW ORLEANS.
Sarah E. Bilbe, Fatima Brakta, Julio Figueroa, Ashaur Azhar, University Medical Center of New Orleans, New Orleans, LA.

PURPOSE: Procalcitonin has been proven to be a helpful biomarker with high specificity for inflammation caused by bacterial infections. The role of procalcitonin as guidance for de-escalation of antibiotics in patients with sepsis or septic shock has been studied. As a result, a procalcitonin protocol was implemented at University Medical Center - New Orleans (UMCNO) in November 2017. This protocol guides discontinuation of antimicrobial therapy in septic and septic shock patients. The purpose of this study is to evaluate if implementation of the procalcitonin protocol reduces total number of antibiotic days in septic patients. The secondary objectives will include assessing adherence to the UMCNO procalcitonin protocol, difference in mortality at 28 days, and total length of hospital stay.

METHODS: An IRB approved, retrospective chart review of septic patients was conducted between January 1st, 2018 to July 31st, 2018. Septic patients with a procalcitonin level
were compared to septic patients with no procalcitonin level at UMCN. Patients 18 years or older with a diagnosis of sepsis or septic shock who received broad spectrum antibiotics for at least 24 hours were included. Patients with the following were excluded: localized, fungal, or central nervous system infections, burns, recent surgery or trauma, renal failure on hemodialysis, those who are severely immunocompromised, or those receiving treatment with cytokine stimulating agents. The following data will be collected for each patient: gender, age, weight, height, race, length of hospital stay, antibiotic days of therapy, which antibiotics were initiated, procalcitonin values, time and date of procalcitonin, source of infection, organism causing infection, and mortality at 28 days. A t-test will be used to compare total antibiotic days.

RESULTS: Data collection is currently in progress.

CONCLUSION: Final study results are pending.

PL X-11
IMPACT OF PHARMacist-RECOMMENDED VANcomYcIN DOSING AND MONITORING ON INPATIENT INTERNAL MEDICINE SERVICES.
Blake Bennie, David Reynoso, Scott Ferren, Eddie Lee, Krishna Suthar, UTMB Health, Galveston, TX.

PURPOSE: Pharmacist-driven protocols for vancomycin dosing have been shown to increase pharmacokinetic accuracy, decrease days of vancomycin therapy, and decrease the incidence of nephrotoxicity. The purpose of this study is to evaluate the impact of pharmacist recommendations for patients on intravenous vancomycin at our academic medical center. Currently, our institution does not have a formal pharmacy consult service for vancomycin dosing. With the data gathered during this project, we hope to provide evidence that such a consult service would improve pharmacokinetic and clinical outcomes in patients receiving intravenous vancomycin.

METHODS: Patients with an order for intravenous vancomycin on Internal Medicine Teams 1, 2, 3, or 4 will be included. Pharmacists will make therapeutic recommendations for vancomycin dosing and monitoring to the respective physicians on Teams 1 and 2, while Teams 3 and 4 physicians will manage vancomycin therapy with no clinical pharmacist coverage. Pharmacists will provide vancomycin monitoring and interventions from 8 am to 5 pm on Monday through Friday, from September 1, 2018 to February 28, 2019. Our electronic medical record will be used for chart review and data collection after the patient has been discharged. The primary outcome of the study will be percentage of initial vancomycin troughs within target range, defined as 10-20 mg/L. Secondary outcomes of the study will include incidence of nephrotoxicity, time to therapeutic trough level, percentage of appropriately drawn trough levels, duration of vancomycin therapy, and switches to other methicillin-resistant Staphylococcus aureus-targeting antibiotics.

RESULTS: Research in progress

CONCLUSION: Research in progress

PL X-12
COMPARISON OF PRE AND POST IMPLEMENTATION OF A CLINICAL PROTOCOL ALLOWING PHARMACISTS TO INITIATE UNIVERSAL MRSA DECOLONIZATION ORDERS FOR PATIENTS ADMITTED TO AN ADULT ICU.
Jaheshia A. Below, Gretchen Blondeau, Kisha Gant, slidell Memorial Hospital, slidell, LA.

BACKGROUND: Healthcare acquired infections (HAI) are now the fifth leading cause of death in U.S. acute-care hospitals with the highest incidence being in intensive care units (ICU). Decolonization is an evidence-based intervention that can be used to prevent HAI. Studies show that decolonization procedures are effective in reducing colonization rates and controlling MRSA. As a result, MRSA decolonization protocols are implemented to eliminate MRSA and reduce infections. Currently, there are no studies evaluating pharmacist initiated decolonization orders.

PURPOSE: To identify the percentage of patients with universal MRSA decolonization orders initiated post-implementation of a clinical protocol allowing pharmacist to initiate the orders in comparison to pre-implementation of the protocol.

METHODS: This is a retrospective analysis of patients admitted to an adult ICU between March 1, 2018 and September 30, 2018. On June 19, 2018, a protocol permitting pharmacists to initiate universal MRSA decolonization orders for adult ICU patients. Prior to this intervention, only physicians, nurse practitioners, and physician assistants entered these orders. Data was collected using the institution’s electronic medical records of all patients admitted to an adult intensive care units three months before and three months after the implementation of the protocol. The primary outcome was the percent of patients with MRSA decolonization orders initiated during pre-implementation and post-implementation of the protocol. The secondary outcome was the percent of orders initiated by non-pharmacist versus pharmacist post-implementation of the protocol.

RESULTS: An interim analysis revealed a total of 1501 patients were admitted to an adult ICU from March 1 - September 30, 2018. A total of 799 were admitted pre-implementation of the protocol and 702 patients were admitted post-implementation of the protocol. There were a total of 352 (44.1%) chlorhexidine orders and 375 (46.9%) mupirocin orders during the pre-implementation of the protocol period and of those orders 100% were initiated by a non-pharmacist. After implementation of the protocol, there were a total of 561 (79.9%) chlorhexidine orders and 575 (81.9 %) mupirocin orders. During the post implementation of the protocol, 54.1% of the chlorhexidine orders and 56.5% of the mupirocin orders were initiated by pharmacists.
PL X-13
EFFECTS OF PHARMACIST-DRIVEN MOLECULAR DIAGNOSTIC ALERTS ON CLINICAL OUTCOMES. Richelle Camp, Charles F. Seifert, Texas Tech University Health Sciences Center, School of Pharmacy, Lubbock, TX.

PURPOSE: To evaluate the impact of pharmacist molecular diagnostic result alerts on clinical outcomes including: Time from pharmacist queue alert to the administration of appropriate antimicrobial therapy, hospital length of stay, and in-hospital mortality.

METHODS: Retrospective chart review including patients with a documented positive Verigene Sepsis PCR molecular diagnostic result. Patients were stratified into either a pre-implementation or post-implementation molecular diagnostic pharmacist queue alert cohort. Patients were selected between October 1st and April 1st for the years of 2016, 2017, and 2018. Primary outcomes include hospital length of stay and in-hospital mortality. Secondary outcomes include the time of administration of appropriate antimicrobial therapy and change of antimicrobial agent per pharmacist recommendation.

RESULTS: Data collection and analysis in progress
CONCLUSION: Conclusions to be presented following completion of data collection and analysis.

XC – INFECTIOUS DISEASES/HIV

PL X-14
WHICH PROVIDER TYPE IS MOST PrEPARED? A RETROSPECTIVE COHORT STUDY ANALYZING RETENTION IN CARE AMONG PRE-EXPOSURE PROPHYLAXIS (PrEP) PATIENTS. Rania El-Desoky, Sara Al-Dahir, Isolde Butler, Christopher Gillard, George T. Nawas, Hamada Rady, Shandrika Landry, Ghazal Maghareh, Janene Hamideh, Xavier University of Louisiana, New Orleans, LA.

PURPOSE: PrEP is a novel biomedical prevention tool that has proven to decrease the incidence of HIV acquisition. This once daily pill consists of tenofovir 300 mg and emtricitabine 200mg and is up to 92% effective in adherent patients. The CDC’s 2017 updated clinical practice guidelines were released to aid primary care physicians (PCP) in prescribing PrEP. There are multiple avenues for implementation or post-implementation molecular diagnostic pharmacist queue alert cohort. Patients were selected between October 1st and April 1st for the years of 2016, 2017, and 2018. Primary outcomes include hospital length of stay and in-hospital mortality. Secondary outcomes include the time of administration of appropriate antimicrobial therapy and change of antimicrobial agent per pharmacist recommendation.

RESULTS: Data collection and analysis in progress
CONCLUSION: Conclusions to be presented following completion of data collection and analysis.

PL X-15
THE END IS NEAR: RISK FACTORS FOR REDUCED DAPTOMYCIN SUSCEPTIBILITY IN ENTEROCOCCI BLOODSTREAM INFECTIONS. Joy Enochs, Matthew Crotty, Jessica Rago, Methodist Dallas Medical Center, Dallas, TX.

BACKGROUND: Enterococcal infections, while generally of low virulence, have become an increasing concern in the setting of antimicrobial resistance and treatment failure. Resistance to agents commonly utilized to treat these infections such as ampicillin and vancomycin is on the rise, leaving few options remaining. Daptomycin is one of a limited number of agents available to treat vancomycin resistant enterococci (VRE) infections. However, an increased incidence of enterococci isolates with resistance or reduced susceptibility to daptomycin (MIC ≥ 4), as well as microbiologic failure at MICs previously considered susceptible, have been reported. As a result, the Clinical Laboratory and Standards Institute (CLSI) updated its Performance Standards for Antimicrobial Susceptibility Testing (M100) document with new interpretations for enterococcal daptomycin MICs (Susceptible ≤ 1 μg/mL, Susceptible - Dose Dependent = 2-4 μg/mL, and Resistant ≥ 8 μg/mL). Risk factors for daptomycin non-susceptible enterococci (DNSE) infections elucidated to date include daptomycin exposure within 90 days, immunosuppression, and underlying abdominal processes.

PURPOSE: To identify risk factors for enterococci with reduced daptomycin susceptibility (RDSE) in bloodstream infections caused by vancomycin resistant enterococci and compare outcomes of RDSE vs other VRE bloodstream infections.

METHODS: Multicenter (single healthcare system), retrospective study conducted from September 2012 to October 2018 on adult subjects with positive blood cultures for VRE. The primary objective was to build a model to predict RDSE bloodstream infections based on identifiable risk factors. Secondary analyses to clinical outcomes (30-day mortality, treatment failure, length of stay, time to appropriate antibiotics) were conducted comparing patients with infections due to RDSE and other VRE.

RESULTS: Data collection and analysis is currently in progress.

CONCLUSION: Conclusions to be presented
PL X-16
THE EFFICACY AND SAFETY OF DUAL VERSUS TRIPLE-AGENT ANTIRETROVIRAL THERAPY IN HIV-TREATMENT NAÏVE VETERANS. Nhi Hoang, James Cutrell, Henning Drechsler, Rick Weideman, Kalin Clifford, Marcus Kouma, Roger Bedimo, VA North Texas Healthcare System, Dallas, TX.

PURPOSE: To assess the efficacy and safety of raltegravir plus darunavir/ritonavir compared to tenofovir/emtricitabine plus darunavir/ritonavir in the HIV-positive treatment-naïve veteran population.

BACKGROUND: Since 1996, the antiretroviral (ARV) treatments for HIV infection have advanced significantly, now with more than 25 ARV drugs from six different mechanistic classes. Although the suppression of HIV-RNA viral load and restoration of immune function are associated with a positive response to ARV therapy, this is only sustainable if patients can tolerate long-term treatment. Intolerance may not only lead to ARV-related toxicities and complications, but also treatment discontinuation, the development of drug resistance, and increased morbidity and mortality. Current treatment guidelines recommend initiating a regimen consisting of three active drugs, generally two nucleoside reverse transcriptase inhibitors (NRTI) plus a third agent from another mechanistic class for antiretroviral naïve patients. However, dual-therapy has been suggested to improve CD4/CD8 ratio, which might be associated with lower rates of non-AIDS complications and mortality. If effective, two-drug nucleoside-free – or nucleoside-limiting regimens have the potential to reduce toxicity of antiretroviral therapy.

METHODS: Electronic medical records of HIV-positive treatment-naïve veteran patients who were prescribed either raltegravir plus darunavir/ritonavir or tenofovir/emtricitabine plus darunavir/ritonavir at the VA North Texas Health Care System (VANTHCS) were retrospectively reviewed to assess treatment responses. To compare the efficacy between the dual and triple treatment regimens, HIV-RNA viral load and immune function parameters, including CD4/CD8 ratio, were evaluated out to 96 weeks of treatment. In addition, secondary safety measures including increases in serum creatinine and lipid level changes in lipid levels from baseline were analyzed.

RESULTS: To be presented.

PL X-17
EFFECT OF A PHARMACIST-DRIVEN MANAGEMENT PROTOCOL ON THE PROBIOTIC COMBINATION OF LACTOBACILLUS STRAINS FOR PREVENTION OF CLOSTRIDIUM DIFFICILE INFECTION (CDI) IN HOSPITALIZED ADULT PATIENTS. Uyen Huynh, Gregory Perry, Young Lee, Hendrick Medical Center, Abilene, Texas.

PURPOSE: Although several studies have shown the efficacy and effectiveness of using probiotics, the American College of Gastroenterology (ACG) and the Society for Healthcare Epidemiology of America (SHEA) still has not recommended the administration of these healthy microorganisms for the primary prevention of *Clostridium difficile* infection outside of clinical trials. This is due to the lack of establishment for standardization of probiotic products, dosing, formulations, definitions of the infection, and duration of probiotic administration. The purpose of this study is to determine if a pharmacist-driven protocol using combination strains of *Lactobacillus* would help to reduce the incidence of *Clostridium difficile* infection during hospitalization.

METHODS: This was a single-center, observational, retrospective cohort pre-post study. Pre-implementation data collected from September to December 2017 was compared to post-implementation data recorded from September to December 2018 at Hendrick Medical Center, Abilene, Texas. If patients were admitted under one of the hospitalists, Bio-K Plus probiotics was given under the protocol within 48 hours of administration of the following antibiotics: piperacillin/tazobactam, ampicillin/sulbactam, ceftriaxone, levofloxacin, cefepime, ciprofloxacin, meropenem, imipenem, clindamycin, and ceftazidime. Each Bio-K Plus capsule contained 50 billion colony-forming units (CFU) of *Lactobacillus acidophilus*, *Lactobacillus casei*, and *Lactobacillus rhamnosus*. The probiotic was given as one capsule orally once daily until discharge. Patients were excluded from pharmacist intervention if they have one or more of the contraindications listed on the protocol and were currently treated for *Clostridium difficile*. Primary outcome was the incidence of *Clostridium difficile* infection during hospitalization. Secondary outcomes included antibiotic-associated diarrhea during hospitalization, and hospital length of stay. Safety was measured by monitoring for *Lactobacillus* bacteremia. In addition, compliance rate, number of probiotic doses, and antibiotics given to patients at discharge were analyzed. The expected sample size for this study was 600 participants.

RESULTS: In progress

CONCLUSION: To be presented

PL X-18
EVALUATION OF EMPRIC ANTIBIOTIC PRESCRIBING FOR URINARY TRACT INFECTION PATIENTS IN A COMMUNITY HOSPITAL EMERGENCY DEPARTMENT. Diana John, Heidi Michaels, Steven Pass, Hendrick Medical Center and Texas Tech University Health Sciences Center School of Pharmacy, Abilene, TX.

PURPOSE: Urinary tract infections are a leading cause of infection among patients presented to the emergency department. Increasing antibiotic resistance requires clinicians to prescribe effective empiric antibiotic therapy without overprescribing. The objective of this study is to evaluate the appropriateness of empiric antibiotic prescribing for urinary tract infections in the emergency department and the impact on return visits within 30 days to the emergency department.

METHODS: This study is a retrospective, single-center, cohort study that will be conducted in adult patients with urinary tract infections admitted to the emergency department at a 500-bed community hospital. International Classification of Diseases diagnosis codes in the electronic medical record will be utilized to identify patients with a urinary tract infection between July 2017 and September 2018. Pregnant women, patients admitted to the hospital on the first emergency department visit for urinary tract infection, those with incomplete medical records, refusal of treatment or leaving against medical advice, age ≥ 90 years, and prisoners will be excluded. The primary outcome is the percentage of patients in the emergency department prescribed appropriate empiric antibiotics for urinary tract
infection. The secondary outcome is 30-day return visits to the emergency department for urinary tract infection. Data collection includes demographic information, baseline characteristics, comorbidities, laboratory values, microbiologic data, antibiotic therapy, duration of treatment, previous microbiologic data and IV antibiotic use, and return visits to the emergency department within 30 days. Chi-square test will be utilized for nominal data while student t-test will be used for continuous data.

RESULTS: Pending

CONCLUSION: Pending

PL X-19
IMPACT OF ENTEROCOCCAL BACTEREMIA ON CLINICAL OUTCOMES IN PATIENTS WITH LIVER CIRRHOSIS. Isabel Won, Hannah Russo, Raymond Yau, Travis Carlson, Kady Phe, CHI St Luke’s Health Baylor St Luke’s Medical Center, Houston, TX.

PURPOSE: To evaluate clinical outcomes of patients with liver cirrhosis with and without Enterococcal bacteremia.

METHODS: Retrospective data were collected from electronic medical records of 136 patients admitted from June 2013 through August 2018. A list of all patients with liver cirrhosis with ≥ 1 blood culture with Enterococcus spp who fit the inclusion criteria was obtained from the electronic health record database and were matched based on Model for End-Stage Liver Disease (MELD) score in a 1:1 ratio to patients without Enterococcal bacteremia. The primary endpoint was all-cause inpatient mortality. A 2-sided p-value <0.05 was considered significant for all statistical tests. Proportions were compared using Chi-square or Fisher’s exact test. T-tests were utilized to compare normally distributed continuous data. A multivariate analysis was also performed to identify risk factors for mortality.

RESULTS: A total of 136 patients were included in the study. There were 68 patients with Enterococcal bacteremia who were matched to 68 patients without bacteremia. Baseline characteristics between the two matched groups were similar with the exception of length of stay (24.5 vs. 9 days, p <0.001). For patients with Enterococcal bacteremia, there was a statistically significant difference in all-cause inpatient mortality (OR 2.55; 95% CI 1.26–5.16; p=0.01). In addition, APACHE II score (OR 1.08; 95% CI 1.00–1.16; p=0.04), and intensive care unit admission (OR 3.74; 95% CI 1.28–10.91; p=0.02) were also found to be independently associated with 90-day all-cause mortality.

CONCLUSION: Enterococcal bacteremia was found to be independently associated with mortality.

XIA – INFECTIOUS DISEASES/HIV

PL XI-1
EFFECT OF PREVIOUS INFLUENZA VACCINATION ON SEVERITY OF INFLUENZA ILLNESS IN HOSPITALIZED PATIENTS. Kristina Chung, Olga Olson, Carlos Perez, Erica Wilson, Michelle Castelll, Medical Center Health System, Odessa, Texas.

PURPOSE: To determine the severity of Influenza illness among vaccinated versus unvaccinated patients and analyze the effect of the Influenza vaccine in its ability to decrease severity of Influenza illness in hospitalized patients.

METHODS: The study retrospectively assesses patients from September 2017 to June 2018 at a tertiary teaching hospital in Odessa, Texas. Patients were selected if they tested positive for influenza by either rapid antigen screen or PCR and do not meet any of the exclusion criteria. Patients were then classified based on their influenza vaccination status, vaccinated versus unvaccinated. The primary endpoint evaluated is disease severity between vaccine classification utilizing information such as type of admission (medical floor versus ICU), requiring ventilation, and requiring the use of vasopressors. Secondary endpoints include all-cause mortality during current admission and hospital length of stay in either ICU or on medical floor.

RESULTS: Statistical analysis in progress, but preliminary data presented. More than 2,000 Influenza tests were performed at this institution during this specified time frame, of which 57 patients met criteria for inclusion. 51% of the patients were female, 42% of patients were between the ages of 41 – 64 years old, and 49% of the patients were over the age of 65. 34 patients made up the vaccinated group while the remaining 23 patients were unvaccinated. 65% of the patients were diagnosed with Influenza A. Average length of stay for vaccinated patients was 4.59 days total and 0.29 days in the ICU while unvaccinated patients average length of stay total and in the ICU was 5.3 days and 1.26 days, respectively.

CONCLUSION: The correlation between vaccination status and disease severity in unclear at this time as statistical analysis is currently being performed. Conclusions to be presented following completion of statistical analysis.

PL XI-2
COMPARISON OF ACUTE KIDNEY INJURY (AKI) INCIDENCE AND RISK FACTORS IN PATIENTS RECEIVING VANCOMYCIN AND CEFEPIME VERSUS VANCOMYCIN AND PIPERACILLIN-TAZOBACTAM. Amanda Stevens Miller, Fatima Brakta, Julio Figueroa, Anne Borghol, Ifeanyi Onor, University Medical Center of New Orleans, New Orleans LA.

PURPOSE: The incidence of vancomycin-induced nephrotoxicity (VIN) when used in combination with other nephrotoxic agents has been explored by various studies. In studies evaluating patients receiving vancomycin plus either piperacillin-tazobactam or cefepime, the acute kidney injury (AKI) rate was higher in patients receiving the piperacillin-tazobactam regimen. The purpose of this study was to determine the incidence of AKI within our institution in patients receiving piperacillin-tazobactam and vancomycin versus cefepime and vancomycin. Secondly, this study aims to compare the length of stay, time to AKI, and effect of concomitant nephrotoxic agents administered amongst both groups.

METHODS: This is an IRB approved single center, retrospective chart review of adult patients admitted to University Medical Center of New Orleans from July 1, 2017 to December 31, 2017. Patients were excluded if the antibiotics were initiated for less than 48 hours, initial serum creatinine greater than 1.2 or a past medical history of ESRD on hemodialysis. Concomitant nephrotoxic agents evaluated were IV contrast administered 72 hours before IV antibiotics, loop diuretics, angiotensin converting enzyme
Methodist Fort Worth. In 2017, the pharmacy department implemented a vancomycin dosing nomogram which was presented to administration and is pending budget approval. MALDI TOF quality improvement project presented to administration and is pending budget approval for MALDI-TOF implementation in microbiology laboratory. IRB submission initiated.

CONCLUSION: Data collection completed for pre-implementation. Pending data analysis.

PL XI-5
ANALYSIS OF ANTIMICROBIAL PROPHYLAXIS APPROACHES IN ALLOGENEIC AND AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANT. Britney A. Ramirez, Gerard W. Gawrysi, Justin Horowitz, Grace C. Lee, Methodist Hospital, San Antonio TX.

BACKGROUND: Allogeneic and autologous hematopoietic stem cell transplant (HSCT) patients develop profound neutropenia during the transplant process. During this time these patients often develop fever, a marker for infection in this profoundly immunocompromised population. Current guidelines recommend antibacterial and antifungal prophylaxis in patients at high-risk of neutropenic fever during the period of expected neutropenia. An institutional quality improvement initiative adjusted antimicrobial prophylaxis initiation to target the duration of severe neutropenia, ANC ≤500/mm³ (ANC500), which is when patients are at the greatest risk of developing febrile neutropenia. This initiative was implemented with the intent of reducing the risk of adverse toxicities and complications associated with unnecessary exposure of antimicrobials.

METHODS: A retrospective analysis was conducted in which adult patients were reviewed from November 2016 through November 2018. The pre-intervention cohort (November 2016 to November 2017) called for the initiation of antimicrobial prophylaxis on Day -1 prior to transplant. The post-intervention cohort (November 2017 to November 2018) called for initiation of antimicrobial prophylaxis when patients became neutropenic, defined as ANC500. Fever after transplantation, which was defined as a temperature of at least 38 C after transplant, was measured. The primary
outcome was frequency of febrile occurrences. Secondary outcomes included days of antimicrobial exposure, positive blood cultures, all-cause mortality, length of stay, graft-versus-host disease, and *Clostridium difficile* rates. Patients were excluded if they received a haploidentical transplant, or had improper protocol administration. Categorical variables were analyzed using x² test and continuous variables using the student t test or Wilcoxon Rank Sum. A p-value < 0.05 was considered statistically significant. All analyses were performed using SPSS 25.0® (IBM Corp, Armonk, NY, USA).

**RESULTS:** A total of 248 patients were included in the final analysis. Ultimately, 130 patients in the pre-intervention cohort, and 118 patients in the post-intervention cohort were included. Forty allogeneic and 208 autologous HSCT patients were included in the final analysis. There was no difference in fever occurrences between the two groups (79% pre vs 69% post; p=0.078). There was a significant reduction in the mean antibacterial (10.3 vs 4.8; p<0.001 ) and antifungal (13.4 vs. 7.4; p=0.001) prophylaxis per patient days in the pre- and post-intervention group. No significant difference in positive bacterial blood cultures (11.5% pre vs. 16.9% post; p=0.222), ICU admissions, hospital length of stay or all-cause mortality were identified.

**CONCLUSION:** Delaying the initiation of antimicrobial prophylaxis to when patients are severely neutropenic showed no difference in fever occurrence or other secondary outcomes. This approach is associated with a drastic reduction in antimicrobial exposure.

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**PL XI-7**

**RISK OF ACUTE KIDNEY INJURY IN PATIENTS ON VANCOMYCIN AND PIPERACILLIN-TAZOBACTAM COMPARED TO THOSE ON VANCOMYCIN AND CEFEPIME AT DOCTORS HOSPITAL AT RENAISSANCE.** Terrilynne Pham, Ronnie Ozuna, Rene Verduzco, Daniela Bazan, Doctors Hospital at Renaissance, Edinburg, TX.

**PURPOSE:** To determine incidence of acute kidney injury in patients on vancomycin and piperacillin-tazobactam compared to vancomycin and cefepime at Doctors Hospital at Renaissance.

**METHODS:** This study is a single-center, retrospective cohort study from July 2016 to July 2018. This study includes patients greater than 18 years of age who were on either on the combination of vancomycin and piperacillin-tazobactam or vancomycin and cefepime for at least 48 hours and initiated within 48 hours of one another. The primary outcome is the incidence of acute kidney injury, as defined by Acute Kidney Injury Network (AKIN) criteria.

**RESULTS:** Research in progress.

**CONCLUSION:** Research in progress.

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**XIB – INFECTIOUS DISEASES/HIV**

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**PL XI-8**

**IMPACT OF NASAL MRSA PCR UTILIZATION ON DAYS OF VANCOMYCIN THERAPY FOR PNEUMONIA AND CELLULITIS.** Ashley Long, PharmD, Shivani Patel, PharmD, BCPS, Edward Septimus, MD, FACP, FIDSA, FSHEA, John Butler MD, Memorial Hermann Southwest Hospital, Houston, TX.

**PURPOSE:** Vancomycin is one of the most commonly used antibiotics in patients with pneumonia and skin and soft tissue infections (SSTIs) requiring hospital admission. Discontinuation of empiric vancomycin use is primarily dictated by microbiological evidence demonstrating the use of other antimicrobials prior to study antimicrobial initiation; patients were also excluded if they required vasopressors during their hospitalization, they had multi-drug resistant risk factors, or an immunocompromising state. The primary endpoint is to compare the composite outcome of surgical site infection, recurrent intra-abdominal infection, and all-cause mortality within 30 days after index source control procedure. Secondary endpoints include individual components of the composite outcome, hospital length of stay from index source control procedure, in-hospital mortality, time to clinical resolution, rate of *C. difficile* infection, and presence of resistant organisms in recurrent infections. Parametric continuous data will be analyzed utilizing the Student t test and non-parametric continuous data will be compared using the Mann-Whitney U test. A chi-square test will be used to compare categorical data.

**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.
PL XI-9

OBESITY AS A PREDICTOR FOR NEPHROTOXICITY IN PATIENTS RECEIVING VANCOMYCIN/PIPERACILLIN-TAZOBACTAM THERAPY.  David N Rhoads, Vu Ta, James R Tyler, CHRISTUS Mother Frances Hospital, Tyler, TX.

PURPOSE: Obesity has continued to increase in prevalence in the US, and the treatment of infections in this population remains a challenge due to lack of clear dosing recommendations. Vancomycin (VAN) use has been linked to higher incidences of nephrotoxicity in obese patients. Also, piperacillin-tazobactam (TZP) use in combination with VAN has led to higher rates of nephrotoxicity. However, little is known about the relationship between obesity and nephrotoxicity in combination therapy. This study aims to determine if obesity is a risk factor for nephrotoxicity in patients receiving concomitant VAN-TZP therapy.

METHODS: This was a retrospective, single center study of patients who received concomitant therapy with VAN-TZP for at least 48 hours. Patients were stratified into two groups: those with BMI greater than 30 kg/m2 (obese) and those less than 30 kg/m2 (non-obese). Patients with severe renal impairment (creatinine clearance < 20 mL/min) or on renal replacement therapy at baseline were excluded. The primary endpoint of this study was nephrotoxicity defined as a 50% increase in serum creatinine, or an absolute increase of 0.5 mg/dL as compared to baseline levels measured within 48 hours prior to initiation of antibiotic therapy.

RESULTS: There were 655 patients that met inclusion. The incidence of nephrotoxicity was 15.7% in obese patients versus 15.5% in non-obese patients (p=0.93). There was also no difference in length of stay (p=0.13), nor time to nephrotoxicity (p=0.40). There was a slight difference in initial vancomycin trough between obese patients (12.7 mcg/mL) and non-obese patients (11.9 mcg/mL), p=0.05.

CONCLUSION: In this retrospective review, obesity was not associated with increased incidence of nephrotoxicity when giving VAN-TZP combination therapy. Our results do agree with previous research that demonstrate this antibiotic combination does lead to significant incidence of kidney injury.
PL XI-11
UTILITY OF RESPIRATORY CULTURE GRAM STAIN FOR PREDICTING FINAL CULTURE RESULTS IN PATIENTS WITH CLINICALLY DIAGNOSED PNEUMONIA. Jessica Seadler, Terri Smith, Andrew Faust, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

PURPOSE: To evaluate the correlation between respiratory specimen gram stain and final culture growth in patients with clinically diagnosed pneumonia.

METHODS: A retrospective chart review study was conducted to evaluate all patients who had a respiratory culture collected between January 1, 2018 and September 30, 2018 and met the following criteria: greater than 18 years of age, inpatient admission to Texas Health Presbyterian Hospital Dallas, and a clinical diagnosis of pneumonia per the CDC surveillance definition. Respiratory specimens were of acceptable quality for culture if there were ≤ 10 epithelial cells per low power field and polymorphonuclear leukocytes present on initial microscopic examination. The primary outcome of this study was to determine the overall correlation of respiratory culture gram stain for predicting final culture results. Secondary outcomes included the percentage of specimens with a positive gram stain and negative culture results, the discordance rate between a positive gram stain and a positive culture, the correlation rates within each specimen collection method, and the potential influence of antibiotics on the yield of culture.

RESULTS: The microbiologic results of 237 respiratory cultures were evaluated. Of the 61 specimens with a positive gram stain, 34 (55.7%) yielded a bacteria in final culture, while 27 (44.3%) were associated with no bacterial growth. Three of the 34 specimens grew a bacteria that was discordant with the single morphology reported in the gram stain. Five specimens revealed one morphology on gram stain but then grew more than one bacteria of different morphologies in culture. In contrast, of the 176 specimens with a negative gram stain, 135 (76.7%) were associated with no bacterial growth in final culture, while the remaining 41 (23.3%) were associated with growth of at least one bacterial isolate. Overall, the sensitivity was 45.3% (34/75) and the specificity was 83.3% (135/162).

CONCLUSION: This study show variable results regarding the predictive value of respiratory specimen gram stain. Caution should be taken prior to de-escalating antibiotic therapy based solely on the gram stain.

PL XI-12
CLINICAL IMPACT OF PHARMACISTS INVOLVEMENT IN ANTIBIOTIC STEWARDSHIP WITH THE USE OF VERIGENE® RAPID BLOOD PATHOGEN DIAGNOSTIC TESTING IN A LARGE TERTIARY HOSPITAL. Alandra Mitchell, Vida Haddad, Angela Purvines, Luke Barnett, Quynh Nguyen, Brandi Corpier, Ronald Hall. BSA Hospital, Amarillo TX.

PURPOSE: To evaluate the clinical impact of a positive blood culture pharmacist notification and therapy recommendation protocol on antimicrobial stewardship.

METHODS: A single center, retrospective study was conducted for inpatients with positive blood cultures using the Verigene® rapid diagnostic molecular assay. Patients admitted from January to July 2018 (pre-protocol) and August to September (post-protocol) were eligible for inclusion if they were 18 years or older and blood samples were not identified as contaminants by the Verigene® Rapid Diagnostic Molecular assay. The primary outcome was time to first antibiotic dose and the acceptance of pharmacy therapy recommendations.

RESULTS: An interim analysis of the patient population was performed. The implementation of the protocol led to faster administration of empiric antibiotics in patients with positive blood culture results and greater acceptance of pharmacist recommendations. Further analysis is in progress.

CONCLUSION: Based on interim data, the involvement of pharmacist in reporting of positive blood cultures with the use of the Verigene® Rapid Diagnostic Molecular assay has shown some benefit in antibiotic stewardship.

PL XI-13
OUTCOMES OF ANTIBIOTIC CESSATION IN ONCOLOGY PATIENTS WITH POSITIVE RESPIRATORY VIRAL PANEL POLYMERASE CHAIN REACTION RESULTS. Stephanie M. Smith, Jon D. Herrington, Julie Oda, Rihih Chavda, Baylor Scott & White Medical Center-Temple, Temple, TX.

PURPOSE: To evaluate the outcomes of oncology patients that cease antibiotics with positive respiratory viral panels and all other cultures negative that present to Baylor Scott & White Medical Center—Temple.

METHODS: Data from February 2, 2014 through August 31, 2018, was retrospectively collected from the institution’s electronic records. Patients were included if they were at least 18 years of age, active malignant disease, positive respiratory viral panel, and all other cultures negative.

RESULTS: More than 200 charts were reviewed with 127 patients meeting inclusion criteria. Of these 64 patients were in included in the antibiotics discontinued arm and 63 patients were included in the antibiotics continued arm. The most common malignancy was lymphoma (22.2%) and the common virus among these patients was rhinovirus/enterovirus (56.7%). There was not a statistically significant difference in the composite primary outcome of readmission within 30 days, ICU admission within 30 days, or death between the two groups (p=0.7285). There was a statistically significant different in patients with escalation to the ICU in the antibiotics continued arm (p=0.0435). There were no statistically significant differences in the secondary outcomes of Clostridium difficile within 30 days or Staphylococcus aureus or Streptococcus pneumonia within 30 days.

CONCLUSIONS: Discontinuing antibiotics in oncology patients with positive respiratory viral panels and all other cultures negative did not lead to an increased 30 day readmission, ICU admission, or death.
XIC – INFECTIOUS DISEASES/HIV

PL XI-14  
IMPACT OF A PHARMACIST-DRIVEN, AUC-BASED THERAPEUTIC DRUG MONITORING APPROACH ON OUTCOMES IN PATIENTS AT HIGH RISK FOR VANCOMYCIN-RELATED NEPHROTOXICITY. Danielle Trierweiler, Justin Booth, Norman Regional Health System, Norman, OK.

PURPOSE: Although the optimal pharmacokinetic/pharmacodynamic parameter for vancomycin is the 24-hour area under the concentration-time curve over minimum inhibitory concentration ratio (AUC24/MIC), trough-only measurement is recommended by guidelines and routinely used as a surrogate marker for AUC24/MIC. It has been shown that trough serum concentrations above 15mcg/mL are associated with an increased risk of vancomycin-associated nephrotoxicity independent of other known risk factors. This study aims to compare AUC-based therapeutic drug monitoring to traditional trough-only monitoring.

METHODS: Both peak and trough vancomycin serum concentrations will be drawn at steady-state. AUC24/MIC will then be calculated using the trapezoidal rule via an Excel-based calculator. AUC24/MIC and trough values will be reviewed by a pharmacist to assess the need for intervention.

RESULTS: Baseline data collected from October 1, 2018 to October 31, 2018 identified that 33 of 51 (64.7%) patients reviewed had a trough goal of greater than 15 mcg/mL. Of the 82 troughs reviewed, 33 (40.24%) were below goal. The average trough serum concentration was 13.77 mcg/mL, the mode dose was 1500mg, and the mode interval was 12 hours.

CONCLUSION: N/A

PL XI-15  
IMPACT OF RAPID DIAGNOSTIC TESTING AND ANTIMICROBIAL STEWARDSHIP ON GRAM-NEGATIVE BLOODSTREAM INFECTIONS AT A LARGE COMMUNITY HOSPITAL. Khine Tun, Gerard W. Gawrys, Jordan Meckel, Grace C. Lee, Methodist Hospital and Methodist’s Children Hospital, San Antonio, TX.

PURPOSE: Prompt identification of an etiologic pathogen is vital for the optimal management of bloodstream infections (BSIs). Rapid diagnostic testing (RDT) has implications for the treatment of BSIs, particularly for cases with resistant gram-negative (GN) organisms. There is limited data evaluating the outcomes of RDT at a large community hospital. The objective of this study was to assess the impact of Verigene® gram-negative blood culture nucleic acid test (BC-GN) in conjunction with a pharmacy-driven antimicrobial stewardship team (AST), on time to antimicrobial optimization and patient outcomes.

METHODS: This was a retrospective pre- and post-intervention study at a 950-bed community hospital in South Texas. Verigene® BC-GN rapidly identifies four GN species (E. coli, K. pneumoniasiae, K. oxytoca, P. aeruginosa), four genera (Acinetobacter, Proteus, Citrobacter, Enterobacter) and discerns resistance markers for CTX-M, IMP, KPC, NDM, VIM and OXA genes, with a turnaround time of 2 hours. The results from Verigene® BC-GN are electronically transmitted to the pharmacy-managed surveillance software for AST review and intervention. Clinical isolates from adult patients with GN BSIs were included across two study periods: from July 1, 2012 to July 31, 2014 in the pre-intervention group (prior to BC-GN with AST) and from July 1, 2015 to July 31, 2017 in the post-intervention group (after BC-GN with AST). The primary outcome was time to optimal therapy (TOT) from initial culture positivity. Secondary outcomes included TOT based on clinical pharmacy staffing hours and organisms, intensive care unit (ICU) length of stay, and all-cause mortality. Fully staffed clinical pharmacy hours were defined as 0700-2000 on weekdays. Categorical variables were analyzed using x2 test and continuous variables using the student t test or Wilcoxon Rank Sum. A p-value < 0.05 was considered statistically significant. All analyses were performed using SPSS 23.0® (IBM Corp, Armonk, NY, USA).

RESULTS: Among 295 patients screened with an initial episode of GN BSI, 34 were excluded for polymicrobial bacteremia (n = 26) and death/discharge before gram stain (n = 8). Overall, 136 and 125 patients were included in the pre- and post-intervention group, respectively. Apart from ICU admission at the time of culture collection, there were no significant differences in baseline characteristics between the two groups. The post-intervention group had a significantly shorter TOT (58.56 hours vs. 32.4 hours, p < 0.001). Notably, time to carbapenem therapy for patients with third-generation cephalosporin resistant isolates was faster in the post-intervention group (52.56 hours vs. 27.84 hours, p = 0.1). In the post-intervention period, TOT was shorter during fully staffed clinical pharmacy hours (36.72 hours vs. 24 hours, p = 0.16). No differences in ICU/hospital length of stay or all-cause mortality were found.

CONCLUSION: The implementation of RDT with a pharmacy-driven AST substantially decreased TOT for GN BSIs. This study also highlighted the positive impact of clinical pharmacy staff on accelerating TOT.

PL XI-16  
EFFECTIVENESS OF A PHARMACY-DRIVEN GRAM-NEGATIVE DE-ESCALATION PROTOCOL AT A LARGE ACADEMIC MEDICAL CENTER. Amber N. Welborn, Elizabeth O. Hand, Kristi Traugott, University Health System, San Antonio, TX.

PURPOSE: To evaluate the effectiveness of pharmacist-authored antimicrobial stewardship notes on the appropriate and timely de-escalation of antibiotics with broad spectrum Gram-negative coverage at University Hospital in San Antonio, Texas. This prospective quality improvement project also aims to assess the effect of stewardship notes on days of antibiotic therapy and rates of Clostridium difficile infection, as well as the potential impact of this protocol on the workflow of our pharmacy department.

METHODS: A daily report was generated in the electronic medical record (EMR) to identify patients who had been on either meropenem, piperacillin-tazobactam, cefepime, levofloxacin, or ciprofloxacin for ≥ 72 hours. Patients were then screened for eligibility based on predefined criteria approved by the Antimicrobial Stewardship Team (AST) involving assessments of microbiological culture data and clinical stability. Reports were generated between September 2018 and March 2019 and template notes were
placed in the EMR to recommend de-escalation. The effect of these notes on time to de-escalation was compared to a group of randomly selected historical control patients admitted to the hospital from September 2017 to March 2018.

RESULTS: Eighty-two patients were included in this analysis. Thirty-two patients were eligible for de-escalation and had a pharmacist-authored antimicrobial stewardship note placed in their chart. These patients were compared to a group of 50 historical control patients. Of the 32 patients receiving stewardship notes, the recommendation acceptance rate was lower than anticipated (14/32, 43.8%). Overall, there was no difference between the note and historical control group in time to de-escalation [158.5 hours (IQR 120.3 to 217.5) vs. 161.5 hours (IQR 124.5 to 218.3); P=0.8866]. There was also no difference observed between the note and historical control groups in rates of C. difficile infection [2/32 (6.3%) vs. 6/50 (12.0%); P=0.4728] or total days of therapy with broad spectrum Gram-negative antibiotics [9 days (IQR 6 to 11.8) vs. 8 days (IQR 6 to 11); P=0.7197]. Among the patients eligible for de-escalation, none required a re-escalation of broad-spectrum Gram-negative coverage when the recommendation was accepted, supporting the appropriateness of our criteria. Decreased time to de-escalation [125.5 hours (IQR 102 to 162.8) vs. 198 hours (IQR 149.8 to 235.3); P=0.0059] and a reduction in total days of therapy with broad spectrum Gram-negative antibiotics [6.5 days (IQR 5 to 11.3) vs. 9.5 days (IQR 7.8 to 12.3); P=0.0340] were observed when comparing patients for whom the recommendation in the note was accepted to those for whom the recommendation was not accepted.

CONCLUSION: Placing an isolated antimicrobial stewardship note recommending de-escalation in the chart without additional contact or follow-up does not appear to reduce time to de-escalation of broad spectrum Gram-negative antibiotics.

PL XI-18
PHARMACOKINETIC COMPARISON OF PHARMACIST-MANAGED VERSUS TRADITIONAL DOSING AND MONITORING IN TWO COMMUNITY HOSPITALS. Naomi Wu, Jefferson G. Bohan, Kyana Stewart, Samuel T. King, Ochsner Medical Center, New Orleans, LA.

PURPOSE: This study evaluates pharmacist-managed versus provider-managed vancomycin therapy to determine a difference in achieving pharmacokinetic efficacy targets (vancomycin serum trough concentration and area under the curve [AUC] target attainment) with safety objectives evaluating rates of acute kidney injury (AKI) and supratherapeutic levels of vancomycin serum trough or AUC levels in each group. Secondary objectives include correlating AUC with vancomycin trough levels and determining differences in operational and other clinical parameters between pharmacist-managed and provider-managed dosing.

METHODS: This is an Institutional Review Board-approved, retrospective, matched, case-control study comparing vancomycin dosing practices at two community hospitals within a health system from January to June 2018. Hospital A (control arm) employs traditional, non-pharmacist-managed vancomycin dosing and monitoring. Hospital B (case arm) employs a wide-spread pharmacist-managed vancomycin dosing consult program. Patients will be matched based on dosing frequency, severity of illness, and obesity status. All patients age 18 or older, admitted to Hospitals A or B, and receiving at least 3 consecutive doses of IV vancomycin on a scheduled dosing frequency of every 8, 12, or 24 hours with at least one trough collected before at least the third dose will be included in this study. Exclusion criteria include: vancomycin for surgical prophylaxis, any renal replacement therapy, creatinine clearance less than 30 milliliters per minute, past medical history of any amputations, and any infectious diseases consult. Patients in the case group without a pharmacy-to-dose vancomycin consult will also be excluded. Data collected will include baseline characteristics, daily serum creatinine, vancomycin dose, timing of dose and levels, trough and random level results, and number of levels ordered by either pharmacists or providers.

RESULTS:
Data analysis is currently in progress.

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

PL XI-19
SHORT VERSUS PROLONGED DURATION OF ANTIBIOTIC TREATMENT IN GRAM-NEGATIVE BLOODSTREAM INFECTIONS, Elle R. Kline, S. Travis King. Ochsner Medical Center, New Orleans, Louisiana.

PURPOSE: Gram-negative bloodstream infections are a major contributor to morbidity and mortality in hospitalized patients and there are currently no guidelines regarding the optimal duration of therapy for these infections. Longer durations of antibiotics have been associated with Clostridium difficile infections, multi-drug resistant organisms, and adverse effects, while insufficient duration of treatment could lead to treatment failure. The purpose of this study is to evaluate the optimal duration of antibiotic treatment for gram-negative bloodstream infections in hospitalized patients.

METHODS: This study was submitted to the Institutional Review Board for approval. It is a single center, non-inferiority, retrospective chart review. The primary endpoint of this study will look at overall treatment failure in patients treated with antibiotics for a short (<10 days) versus prolonged (10 days or more) duration of therapy for gram-negative bloodstream infections. Overall treatment failure will be defined as a composite outcome of all-cause mortality, recurrent infection, and readmission within 30 days. Secondary endpoints will include the emergence of multi-drug-resistant organisms and Clostridium difficile infection. The electronic medical record system will identify patients who have positive blood cultures with gram-negative bacteria. The following data will be collected; patient age, gender, ethnicity, weight, comorbidities, gram-negative organism cultured and time on antibiotic therapy. The data collected will be de-identified of all identifiable health information and will be entered electronically into an Excel spreadsheet. This system is password protected and can only be accessed by individuals partaking in the study.

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

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

XII - INTERNAL MEDICINE/PHARMACOTHERAPY

PL XII-1
LENGTH OF STAY (LOS) EVALUATION IN PATIENTS TREATED WITH LACTULOSE VS. LACTULOSE PLUS RIFAXIMIN FOR INITIAL TREATMENT OF OVERT HEPATIC ENCEPHALOPATHY (HE). Leylah Azali, Tamara Knight, Evan Peterson, Amy Gums, Seton Healthcare Family, Austin, TX.

PURPOSE: The current American Association for the Study of Liver Diseases guidelines recommend lactulose as first line treatment for overt HE. Rifaximin is recommended as add on therapy to lactulose for prevention of HE recurrence. In the current guideline, there are no recommendations to use rifaximin in the treatment of overt HE. However, previous studies evaluating mostly grade 3-4 HE patients concluded decreased LOS when rifaximin was added to lactulose therapy. The objective of this research is to evaluate LOS in patients admitted to a general medical floor who received lactulose with or without rifaximin during the first 48 hours of treatment. This study will evaluate if rifaximin plus lactulose decreases LOS in patients that have a lower severity of encephalopathy.

METHODS: This is a multicenter, retrospective, chart review evaluating adult patients with a primary ICD-9 or-10 diagnosis for overt HE. Patients will be included if they received lactulose with or without rifaximin within the first 48 hours of HE diagnosis. Exclusion criteria include age less than 18 years old, initiation of treatment in the intensive care unit, documented home rifaximin use, history of a transjugular intrahepatic portosystemic shunt procedure, severe hyponatremia, concurrent use of metronidazole or noremycin, and patients who refused all lactulose doses within a 24-hour period. Comparator groups include lactulose monotherapy or lactulose plus rifaximin within 48 hours of HE diagnosis. The primary endpoint is total hospital length of stay. Secondary endpoints include mortality and cost of treatment. Data collection will include patient demographics, various lab values, time of dose initiation, number of doses received, number of bowel movements, admission date, and discharge date. Continuous variables will be evaluated using the Student t-Test. Categorical data will be compared using the Chi-square test or Fisher’s exact. Non-parametric data will be analyzed using the Mann-Whitney U test.

RESULTS: To be reported at the meeting

CONCLUSION: To be reported at the meeting

PL XII-2
HOSPITAL-BASED DISCHARGE MANAGEMENT OF PATIENTS WITH DIABETES WITHIN A COUNTY-OWNED HEALTHCARE SYSTEM. Benny K. Benny, Surinder Kaul, David Hyman, Cesar Munoz, Harris Health System, Houston, TX.

PURPOSE: To characterize hospital-based discharge management of patients with diabetes within a county-based hospital system and to identify opportunities to find cost-effective solutions to improve glycemic control.

METHODS: This retrospective chart review was conducted at Ben Taub Hospital and Lyndon B. Johnson Hospital. Patients with a HgbA1c ≥ 9% admitted to the hospitals between July 1, 2017 and June 30, 2018 were identified using the health system’s Epic electronic medical record system. The primary outcome of this study is to evaluate patients’ diabetic regimens prior to and post discharge. Secondary outcomes consisted of other factors influencing discharge management.

RESULTS: In progress

CONCLUSION: In progress
PL XII-3
EVALUATION OF DIRECT ORAL ANTICOAGULANTS IN OBESE AND EXTREMELY OBESE PATIENTS. Kelvin Tran, Kristina Dupré, Stephanie Youssef-Elagizi, Yana Bukovskaya, Laura A. Fuller, Ochsner Medical Center, New Orleans, Louisiana.

PURPOSE: The 2016 Antithrombotic Therapy for Venous Thromboembolic (VTE) Disease CHEST Guideline recommends the use of direct oral anticoagulants (DOACs) in patients with VTE for patients without cancer as the preferred long-term anticoagulant therapy. However, there has yet to be a large, prospective, a priori analysis assessing the efficacy and safety of DOACs in obese patients. Post-hoc data from phase III trials use inconsistent body mass index stratification and weight categories, with even less representation of patients who are extremely obese. In addition, pharmacokinetic and pharmacodynamic studies have suggested obese patients may be under-dosed, although these studies did not provide any clinical outcomes. Thus, this study seeks to evaluate the use of DOACs in obese and extremely obese populations.

METHODS: A retrospective cohort of patients receiving DOACs in patients who are normal or overweight compared to patients who are obese and extremely obese for the treatment of an index VTE from January 2013 to November 2017 was conducted. The primary objective of the study assessed the rate of recurrent VTE over 12 months from the time of DOAC initiation. Secondary outcomes included incidence of recurrent VTE within 3 and 6 months; confirmed treatment success on follow up imaging within 3, 6, and 12 months; incidence of VTE extension on follow up imaging within 3, 6, and 12 months; as well as major and minor bleeding. An unadjusted and adjusted hazard ratio was calculated with regards to relevant confounders (i.e. liver disease, severe renal disease, cancer).

RESULTS: In progress

CONCLUSION: In progress

PL XII-4
EVALUATING OUTCOMES OF APIXABAN VERSUS WARFARIN USE IN OBESE PATIENTS. Stephanie Cox, Michael McMillan, Khushbu Patel, John Peter Smith Hospital, Fort Worth, Texas.

PURPOSE: DOACs (direct oral anticoagulants) are preferred for the majority of patients for the treatment of VTE (venous thromboembolism) and AF (atrial fibrillation). The International Society of Thrombosis and Haemostasis (ISTH) released a statement suggesting DOACs should not be used in patients who are morbidly obese (BMI or body mass index ≥40 kg/m²) or those who weigh >120 kg due to limited clinical data in these patient populations. At John Peter Smith Hospital, apixaban is the only DOAC on formulary and more data on the outcomes of obese patients using apixaban would aid prescribers in the decision-making process for each patient. The primary objective of this study is to evaluate the incidence of recurrent VTE (venous thromboembolism) and/or stroke in patients with a BMI ≥35 kg/m² receiving apixaban when compared to those receiving warfarin

METHODS: A single-center, retrospective observational study using data collected from the institution’s electronic records from May 2018 to August 2018. Patients were included if they were ≥18 years of age, had a BMI ≥35 kg/m², and utilizing apixaban or warfarin for VTE or AF. Exclusion criteria included patients with mechanical valves, on dual antiplatelet therapy, and patients with an INR <1.8 on admission who were taking warfarin prior to admission. Patients were followed for a period of 6 months for recurrent VTE or stroke confirmed by imaging. Secondary endpoints included mortality and incidence of bleeding.

RESULTS: An interim analysis of 104 patients was performed. The average BMI was 43 ± 7 kg/m². Overall, there was a very low rate of recurrent VTE (3.9% in the apixaban group versus 1.9% in the warfarin group) or stroke (3.9% in the apixaban group versus 1.9% in the warfarin group). No statistically significant difference was found between obese patients prescribed apixaban when compared to those prescribed warfarin.

CONCLUSION: Based upon the interim data, a BMI ≥35 kg/m² was not associated with an increased risk of recurrent VTE or stroke. Event rates were very low which could suggest that larger studies may be necessary.

PL XII-5
THERAPEUTIC ANTICOAGULATION WITH DIRECT ORAL ANTICOAGULANTS VERSUS VITAMIN K ANTAGONIST IN OBESE PATIENTS: PRESCRIBING PRACTICES AND PATIENT OUTCOMES. Ashley Bizzell, Mariam Mousavi, Ellen Yin, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: To identify and compare prescribing practices and outcomes for patients weighing ≥120 kg and/or with a BMI ≥ 40 kg/m² requiring therapeutic anticoagulation with vitamin K antagonist (VKA) or direct acting oral anticoagulants (DOACs) for venous thromboembolism (VTE) and atrial fibrillation (AF).

METHODS: Using data retrospectively collected from the institution’s electronic records from January 1, 2018 to September 1, 2018, we compared prescribing practices and outcomes of 103 obese patients treated for VTE and/or AF. Patients were included if they met weight and/or BMI parameters and received treatment with warfarin or a DOAC.

RESULTS: Of all patients, 32% were newly started on anticoagulation therapy during their hospital stay, most commonly prescribed by internal medicine services. 74 patients were treated with a DOAC and 29 with warfarin. The most common indication for anticoagulation was AF (87%). Of the patients treated for AF, apixaban was the most commonly used agent (53%) followed by warfarin, rivaroxaban, and dabigatran (23%, 19%, and 4% respectively). Of the patients treated for AF, stroke occurred for no patients treated with warfarin and for 4% of patients treated with a DOAC (P = 1.0). Of the patients treated for VTE, warfarin was the most commonly used agent (50%) followed by apixaban and rivaroxaban (36% and 14% respectively). Of the patients treated for VTE, the reocurrence rate for VTE was 18% for patients on warfarin and 11% for patients on a DOAC (P = 0.66). Patients on warfarin therapy presented with bleeding events at a rate of 34% compared to 21% and 18% for rivaroxaban and apixaban respectively (P = 0.09).

CONCLUSION: Patients on warfarin presented with more bleeds compared to patients on DOACs, while there was no difference in thrombotic events. Although not significant, the higher number of patients presenting with strokes in the
AF population on DOACs is concerning and requires larger, well-designed studies to accurately assess their safety and efficacy in obese patients.

**PL XII-6**
**RISK-BENEFIT ANALYSIS OF PROPHYLACTIC HEPARIN AND ENOXAPARIN USAGE IN PATIENTS WITH MODERATE TO SEVERE HEPATIC DYSFUNCTION.** Danny H. Nguyen, Ronald Hall, Jessica Bradley, Kyung Mi Kim, Sabrina Strain. BSA Health System and Texas Tech University Health Sciences Center School of Pharmacy, Amarillo, TX.

**Purpose:** To determine if there is an increased bleed risk with pharmacologic venous thromboembolism (VTE) prophylaxis in patients with moderate to severe hepatic impairment based on Child-Pugh scores.

**Methods:** A retrospective chart review was performed to include patients with the diagnosis of cirrhosis and on VTE prophylactic doses of heparin and enoxaparin between the dates of January 2018 to October 2018. In addition, we compared the enoxaparin and heparin groups with a non-treatment group with otherwise similar baseline characteristics. Subcutaneous enoxaparin doses evaluated in this study were: enoxaparin 30 mg every 12 hours, enoxaparin 40mg daily, and 30 mg daily for CrCl less than 30 ml/min. Subcutaneously heparin doses evaluated in this study were heparin 5,000 units every 8-12 hours. Patient specific characteristics, laboratory values, and presence or absence of a bleed were recorded. In addition, the study evaluated Child-Pugh score, baseline INR, serum albumin levels, total bilirubin, and the presence or absence of ascites and encephalopathy. Lastly, bleed severity was based on an adaptation of the World Health Organization Bleed Scale, where bleed severities are ranked from grades 1 to grade 4, in increasing severity.

**Results:** In progress

**Conclusion:** In progress

**PL XII-7**
**TRIPLE ANTITHROMBOTIC THERAPY IN CARDIAC PATIENTS REQUIRING REVASCULARIZATION.** Anayo Ohiri, Crystal Brown. Methodist Dallas Medical Center, Dallas, Texas.

**BACKGROUND:** Atrial fibrillation (AF) is the most common arrhythmia in clinical practice that often requires stroke prevention with an anticoagulant. Oral anticoagulation (OAC) with either warfarin or non-vitamin K oral anticoagulants (NOACs) significantly decreases the incidence of ischemic stroke and peripheral embolism in patients with AF. Triple therapy is defined as the concurrent use of OAC with either warfarin or NOACs and dual antiplatelet therapy (DAPT) with aspirin plus a P2Y12 inhibitor such as clopidogrel, prasugrel and ticagrelor. The most common clinical indication for triple therapy is stroke prevention with OAC in patients with non-valvular AF in the setting of an acute coronary syndrome (ACS) event or percutaneous coronary intervention (PCI) with stent placement. Common practice reflects an increase in use of triple therapy for the potential reduction in ischemic events associated with stent placement and AF. Yet, there is limited evidence and guidance on prescribing triple therapy in high risk patients. In fact, triple therapy carries a higher risk of bleeding than DAPT or dual therapy with OAC plus aspirin or a P2Y12 inhibitor. As such, the purpose of this study is to evaluate the safety and efficacy of triple antithrombotic therapy (Aspirin + OAC + P2Y12 Inhibitor) in patients with non-valvular AF following an ACS event or PCI requiring stent placement and to evaluate prescribing patterns of such therapy.

**OBJECTIVE:** To evaluate the safety and efficacy of triple antithrombotic therapy in patients taking DAPT of aspirin plus a P2Y12 inhibitor in addition to either a NOAC or warfarin for the prevention of thromboembolic or ACS events in patients with non-valvular AF.

**METHODS:** This study is a retrospective chart review of all adult triple therapy recipients with a history of AF who were discharged from a MHS facility with prescriptions for a combination of aspirin, a P2Y12 Inhibitor and an OAC of either a NOAC or warfarin between April 1, 2017 to April 1, 2018. Electronic medical records were used to assess patient demographics, laboratory values, prescriber information, date of DAPT/OAC initiation, INR values, comorbidities, PCI details (indication, artery location of stenosis, stent type, PCI vessel location, severity of coronary lesion, percentage of stenosis, and fractional flow reserve (FFR) measurement), prior to admission medications, CHADS2Vasce score, HAS-BLED score, total number of bleeding events, location of worst bleeding event, Left Ventricular Ejection Fraction (LVEF), and any medications that significantly interact with warfarin (i.e., CYP3A4 inhibitors that increase bleeding risk).

**RESULTS:** Retrospective data collection and analysis currently in progress.

**CONCLUSION:** Conclusions to be presented based on completed data analysis.

**XII B – INTERNAL MEDICINE/PHARMACOTHERAPY**

**PL XII-8**
**EVALUATION OF CLINICAL INERTIA AND FOLLOW-UP IN PATIENTS WITH POORLY CONTROLLED DIABETES.** Baneen Noorali Khataw, Delaney Ivy, Sebastian Perez, Charlotte Farris, Jerry Smith, Marie Yasuda; Baylor Scott & White Medical Center – Temple, Temple, TX.

**PURPOSE:** To determine the prevalence of clinical inertia, or the failure to initiate or intensify therapy when indicated, in patients with poorly controlled diabetes admitted to the hospital. Hospitalization may present an opportunity to improve the therapy of a patient with poorly controlled diabetes, especially when the admitting diagnosis is related to diabetes.

**METHODS:** Using the electronic medical record, adults admitted to the 636-bed teaching hospital with type 2 diabetes mellitus and a hemoglobin A1c (HbA1c) above 9% between January 1, 2016 and September 30, 2017 were identified. Those without a primary care provider within the health-system or without a HbA1c within three months before admission were excluded. Patients’ admission and discharge medication lists were compared to determine if their diabetes therapy was escalated upon discharge. Patients’ follow-up visits in the twelve months following discharge were evaluated to determine if therapy was
RESULTS: Thirty-seven patients met the inclusion criteria. Of these, 22 patients, or 59.5%, had a change in their diabetes therapy at discharge. Of the remaining patients, 86.7% had a change in therapy at some point over the twelve months following discharge. The mean time to follow up after discharge was 36 days, and the mean time to first change in pharmacotherapy, if not at discharge, was 64 days. Of the entire sample, 16% of patients were readmitted to the hospital within 30 days.

CONCLUSION: Clinical inertia seems to be less of an issue at this teaching hospital when the primary reason for admission is related to diabetes. However, there is still room for improvement in pharmacotherapy changes and patient follow-up after discharge.

PURPOSE: To evaluate the use of weight-based human albumin administration in the setting of spontaneous bacterial peritonitis (SBP) and determine if differences in dosing resulted in changes to in-hospital mortality and other secondary outcomes at a county tertiary teaching hospital.

METHODS: A retrospective, single-center chart review conducted on patients admitted to University Medical Center in Lubbock, TX from November 1st, 2013 through November 15th, 2018. Patients were included in the study based on the diagnosis of SBP and the receipt of empiric antibiotic therapy. The amount of human albumin administered to included patients was recorded and analyzed to determine if differences in dosing resulted in changes to in-hospital mortality, acute kidney injury, and length of hospital stay.

RESULTS: A pre-analysis of 100 patients will be conducted to present any differences in human albumin dosing that resulted in any changes to in-hospital mortality, acute kidney injury, and length of hospital stay.

CONCLUSION: Pending completion of study.

PURPOSE: To assess the safety and efficacy of NOACs (apixaban, rivaroxaban, dabigatran) for the FDA indication of atrial fibrillation in obese (BMI>30 kg/m²) and extremely obese (BMI>40 kg/m²) patients.

METHODS: A multi-center, retrospective chart review was conducted at Methodist Health System from April 2017 to September 2018. Eligible patients were those >18 years old, with a diagnosis of atrial fibrillation identified by ICD 10 codes, and were prescribed a NOAC at MHS during that time period. Patients were excluded if they weighed less than 60 kg, were on a NOAC for a non-FDA approved indication, or concomitant indication of VTE, eGFR less than 15, or on concomitant DAPT therapy. The primary outcome was incidence of stroke and incidence of major bleeding during pre-specified time period while on a NOAC. Major bleeding was defined as any bleed requiring hospitalization. Descriptive statistics was used to characterize subject demographics. P values were obtained from 2-sided fisher exact tests for categorical variables.

RESULTS: A total of 938 patient charts were reviewed. 501 patients met inclusion criteria for the primary outcome. 334 patients were on apixaban, 150 were on rivaroxaban, and 17 were on dabigatran. There were 114 patients in the BMI <30 kg/m² group, 263 patients in the BMI 30-40 kg/m² group, and 124 patients in the BMI>40 kg/m² group. 52% of patients were female with a median age of 70 years. Incidence of stroke reported was 2.63%, 3.42% and 3.23% for BMI <30 kg/m², 30-40 kg/m², and >40 kg/m² respectively. There was no significant difference in
incidence of stroke between the three groups (p-value = 1.000). For incidence of bleed it was reported that: 9.65%, 6.84% and 11.29% for BMI <30 kg/m², 30-40 kg/m², and >40 kg/m² respectively. A post hoc review of the BMI >40 kg/m² and <40 kg/m² groups was conducted in which there was no significant difference in bleeding or primary outcome between the two groups. There was no significant difference in incidence of bleeding between the three groups (p-value = 0.311). Most common bleed requiring hospitalization was gastrointestinal bleed n=24. Median CHA²DS²-VASc score was 4. One-way ANOVA tests were ran to determine if CHA²DS²-VASc score were statistically different for the three groups and there was no significant difference in average CHA²DS²-VASc score between three BMI groups (p-value = 0.752). Mean duration of therapy was: 299, 307 and 347 days for BMI <30 kg/m², 30-40 kg/m², and >40 kg/m² respectively.

CONCLUSION: There was no statistically significant difference seen in occurrence of stroke or bleeding among obese patients on NOAC therapy for non-valvular atrial fibrillation with follow up of about 11 months. A prospective RCT is needed to further investigate the safety and efficacy of NOACs in obese patients. This study brings to light the importance of further investigation given the controversal data available and in current literature as well as the recommendations by the ISTH to avoid in patients with a BMI of greater than 40 kg/m².

PL XII-13

IMPACT OF AN INTERDISCIPLINARY APPROACH TO P2Y₁₂ INHIBITOR SELECTION POST-PERCUTANEOUS CORONARY INTERVENTION IN AN ACADEMIC MEDICAL CENTER. Emma J Winstead, Melanie R Madorsky; Memorial Hermann – Texas Medical Center, Houston, TX.

PURPOSE: Current guidelines recommend patients that undergo percutaneous coronary intervention (PCI) be initiated on dual antiplatelet therapy (DAPT) with a P2Y₁₂ inhibitor and aspirin. Currently at Memorial Hermann-Texas Medical Center, there is no algorithm or standardized process available to help guide the prescription of P2Y₁₂ inhibitors following PCI procedures. The purpose of this quality improvement project is to develop an algorithm and process for documentation that will provide physicians with an approach to choosing a P2Y₁₂ inhibitor agent based on clinical and socioeconomic patient factors.

METHODS: This is a single center, retrospective, quality improvement project conducted from March 1, 2018 to April 30, 2019. Patients over the age of 18 who underwent an in-hospital PCI procedure were included in the study. Any patient less than 18 years of age or those who passed away while in the hospital were excluded. Baseline data was collected and utilized to formulate an algorithm for prescribing P2Y₁₂ inhibitors post-PCI. This process is currently being implemented and data collection post-implementation will be assessed for changes that occurred in P2Y₁₂ inhibitor selection and documentation. The primary outcome of the study is to compare the percentage of patients who are prescribed P2Y₁₂ inhibitors post-PCI with documented reasoning for choice of agent before and after process implementation.

RESULTS: A total of 149 patients were screened for baseline data collection and 131 met inclusion criteria. Of these patients, 32% underwent PCI due to STEMI and 23% underwent PCI for a NSTEMI. Over half of the patients (54%) had either Medicare or Medicaid insurance, 32% had commercial insurance, and 11% were self-pay patients. Sixty two percent of patients were discharged on clopidogrel, 36% were discharged on ticagrelor, and 3% were discharged on prasugrel. Only 23 patients (17.6%) had documentation on choice of P2Y₁₂ inhibitor prior to discharge. Post-implementation data collection and analysis currently in progress.

CONCLUSION: Conclusions to be presented following completion of post-implementation data collection and analysis.
PL XII-14
ASSESSING VENOUS THROMBOEMBOLISM PROPHYLAXIS IN THE LIVER CIRRHOSIS PATIENT POPULATION. Lena Rakouki, Raymond Yao, Ellen Yin, CHI St Luke’s Health Baylor St Luke’s Medical Center, Houston, TX.

PURPOSE: To evaluate the rate of bleeding or thrombosis, assess risk factors associated with thrombosis, and prescribing trends of venous thromboembolism (VTE) in patients with liver cirrhosis that received mechanical, chemical or no VTE prophylaxis

METHODS: Retrospective data was collected from electronic medical records of 123 liver cirrhosis patients on either mechanical, chemical or no VTE prophylaxis admitted to Baylor St. Luke’s Medical Center from January 1, 2013 to September 1, 2018. A chi-squared analysis was performed to assess the rate of bleeding or thrombosis in each group. A one-way ANOVA test was used to analyze continuous data across the three groups and a student’s t-test was used to analyze continuous data across two groups.

RESULTS: Of the 123 patients evaluated, 57 received mechanical prophylaxis, 58 received chemical prophylaxis and 8 received none. Of the patients that received chemical prophylaxis, 43% (n=25) received heparin and 57% (n=33) received enoxaparin. The rate of thrombosis among patients that received mechanical, chemical or no VTE prophylaxis was 4% (n=2) vs. 3% (n=2) vs. 0% (n=0), respectively (p=0.85). Minor bleeding occurred in 30% (n=17) in the mechanical group, 31% (n=18) in the chemical group and 50% (n=4) in those that received no prophylaxis (p=0.5).

Major bleeding occurred in 4% (n=2) in the mechanical group, 9% (n=5) in the chemical group and did not occur at all in the patients that received no prophylaxis (p=0.25). Within the chemical prophylaxis group, 20% (n=5) of patients that received heparin had a major bleed compared to none in the enoxaparin group (p=0.01). Patients that received heparin had higher Model for End-stage Liver Disease (MELD) scores and worse renal function as compared to the enoxaparin group (p=0.01). Among the risk factors for VTE that were evaluated such as obesity, malignancy, immobility and major surgery, there was no statistical difference found in patients that received mechanical, chemical or no prophylaxis. Patients on mechanical prophylaxis had statistically significant higher MELD scores as compared to patients that received either chemical prophylaxis or none, mean MELD scores [SD] of 21±7.8 vs. 17±7.6 vs. 19±12, respectively (p=0.01). There was no significant difference in the international normalized ratio (INR) level at which patients were either started on mechanical or chemical or no VTE prophylaxis (p=0.67).

CONCLUSION: Based on this analysis, there were no significant differences in the rates of bleeding or thrombosis in patients that received mechanical, chemical or no VTE prophylaxis. There was no difference in the presence of risk factors for VTE in patients that received mechanical, chemical or no VTE prophylaxis. Overall, patients with higher MELD scores tended to be on mechanical prophylaxis. Patients that received heparin had higher MELD scores, worse renal function and higher rates of major bleeding.

PL XII-15
THE IMPACT OF A PHARMACIST MANAGED PROTOCOL SUBSTITUTING INTERMITTENT INTRAVENOUS PROTON PUMP INHIBITOR FOR CONTINUOUS INFUSION ADMINISTRATION. Drew Thomas, Andrew Faust, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

PURPOSE: To evaluate the impact of a pharmacist managed protocol which promotes initial management of suspected upper gastrointestinal bleeding with intermittent dosing pantoprazole in hemodynamically stable patients.

METHODS: This study is a retrospective chart review of patients who received intravenous pantoprazole for suspected upper gastrointestinal bleed before and after the implementation of a revised pharmacist managed protocol. Prior to the revision, all patients received at least one IV bag of pantoprazole at 8 mg per hour for 10 hours. Patients who were hemodynamically stable were transitioned to intermittent dosing of 40 mg IV every 12 hours. The revised protocol allowed all hemodynamically stable patients (defined as systolic blood pressure > 90 mm Hg, heart rate < 100 beats per minute, and no requirement of vasopressors) with physician orders for continuous infusion pantoprazole to be transitioned by the pharmacist to intermittent dosing pantoprazole 40 mg IV every 12 hours without a requisite initial IV infusion. The patients in the pre-protocol group were treated between May 1 and July 31, 2018 while those in the post-protocol group were treated between August 7 and October 31, 2018. Patients were included if they were 18 years of age or older and initiated on pantoprazole for a presumed upper gastrointestinal bleed. Patients were excluded if they were not being treated for an upper gastrointestinal bleed, or if they had been previously treated at an outside hospital for longer than 24 hours prior to transfer to our facility. The primary endpoint assessed was the incidence of upper gastrointestinal re-bleeding within 7 days of treatment. Secondary endpoints included the number of pantoprazole continuous infusions and IV push injections, number of blood transfusions, number of endoscopic interventions, length of hospital stay, and overall mortality.

RESULTS: After screening 977 patients, 182 patients met inclusion criteria (99 in the pre-protocol group and 83 in the post-protocol group). Baseline characteristics were similar between the two groups. The re-bleeding rate at day 7 was 8% in the pre-protocol group, compared to 6% in the post-protocol group (p=0.77). The revised protocol reduced the median number of continuous infusions per patient [2 (IQR 1-5) vs 0 (IQR 0-3); p=0.001], but increased the median number of IV push injections [2 (IQR 0-5) vs 4 (IQR 2.5-6); p=0.002] in the pre- and post-protocol groups, respectively. This resulted in a reduction of $19.20 in IV pantoprazole medication costs per patient. There were no significant differences between the pre- and post-intervention groups regarding ICU admission (23% vs 28%; p=0.50), hospital length of stay [4 days (IQR 2-7) vs. 4 days (IQR 3-6); p=0.849], or hospital mortality (6% vs. 5%; p=0.76).

CONCLUSIONS: Implementation of this pharmacy managed protocol in hemodynamically stable patients with an upper gastrointestinal bleed had no detrimental effect on the incidence of re-bleeding within 7 days, but significantly reduced IV pantoprazole use and costs.
PL XII-16
THE EFFECT OF AN INTEGRATED HEPARIN CALCULATOR ON TIME TO THERAPEUTIC ACTIVATED PARTIAL THROMBOPLASTIN TIME (aPTT). Jade Daugherty, Justin Hooper, James Tyler, Tracy Carter, CHRISTUS Mother Frances Hospital, Tyler, TX.

Background: Unfractionated heparin (UFH) is a commonly used anticoagulant indicated for the treatment of multiple thromboembolic disorders and is widely used in the inpatient setting. Activated partial thromboplastin time (aPTT) is a test recommended for monitoring UFH therapy. Failure to achieve therapeutic aPTT within 24 hours of heparin initiation is associated with a significant increase in recurrent thromboembolic events.

Objective: The purpose of this study is to evaluate the effect of the availability of an integrated heparin calculator on time to therapeutic aPTT.

Methods: This is a retrospective, single-center, observational study. Patients who received the hospital’s high dose heparin protocol were included. Patients were assigned to a control group and a treatment group. Patients who received continuous UFH pursuant to protocol from April 2014 to May 2017 were assigned to the control group. Patient who received continuous UFH pursuant to protocol between June 2017 to October 2018, when the heparin calculator was available for use, were assigned to the treatment group. The primary outcome was time (hours) to first therapeutic aPTT. Secondary outcomes included correlation between heparin calculator use time to first therapeutic aPTT, length of stay, and correlation between length of stay and heparin calculator use.

Results: The primary outcome of time to first therapeutic aPTT was 20.0±15.6 hours in the control group and 21.2±17.6 hours in the intervention group (p = 0.49). Heparin calculator use did not correlate with time to first therapeutic aPTT (CC=0.12). There was a difference in LOS between the two groups with 10.3 days in the control group and 8.0 days in the intervention group (p=0.002). However, after further analysis LOS did not relate to heparin calculator use (CC=0.14).

Conclusion: The availability of an integrated heparin calculator did not significantly reduce time to first therapeutic aPTT.

PL XII-17
IMPACT OF AS NEEDED VERSUS SCHEDULED IBUPROFEN PLUS ACETAMINOPHEN ON OPIOID UTILIZATION IN POSTPARTUM PAIN MANAGEMENT. Melinda Vongphrachanh, Fancy G. Manton, Woman’s Hospital, Baton Rouge, LA.

Purpose: With the concern in regards to the opioid epidemic, there is a need to develop strategies to reduce opioid usage. One area for improvement is postpartum pain management. The objective of this study was to assess the impact of scheduled ibuprofen plus acetaminophen on opioid use for postpartum pain management in comparison to our institution’s former treatment protocol.

Methods: Medical records were obtained from July 1, 2017 to July 31, 2017 and July 1, 2018 to July 31, 2018 to identify the study population of patients who underwent cesarean and vaginal-type deliveries. Each study subject was further reviewed to obtain the following information: patient age, gestational age, parity, cesarean or vaginal-type delivery, time of delivery, old or new treatment protocol, total amount of ibuprofen, acetaminophen, and opioid doses (in morphine milligram equivalent [MME]) given from time of delivery to hospital discharge, and hospital length of stay from time of delivery to time of discharge. Conversion of all opioids to MME was achieved through the use of an online opioid calculator. The primary endpoint was to compare the average MME of opioids used in July 2018 versus July 2017. Secondary endpoints included comparing the average MME of opioids used for delivery mode (cesarean and vaginal), parity (first and additional), singleton and multiples, as well as to compare hospital length of stay in July of 2018 versus July of 2017. Final data collected was analyzed using descriptive statistics.

Results: A total of 1,215 patients were included in the final analysis. Patient baseline characteristics were similar between both groups. The average MME used in July 2018 was 41.9 compared to 97.6 in July 2017, which was a 57.1% reduction. A reduction in MME was also seen in the following groups: 47.9% in cesarean deliveries, 67.1% in vaginal deliveries, 60.2% reduction in first parity, 55.6% reduction in additional parities, 55.5% reduction in singleton, and 89.2% in multiples. Length of hospitalization stay from time of delivery to discharge remained unchanged.

Conclusion: Implementing the protocol for scheduled ibuprofen plus acetaminophen for postpartum pain management was found to lower the total average MME of opioids used in July 2018 versus July 2017.

PL XII-18
ATTAINMENT OF THERAPEUTIC ANTI-FACTOR XA LEVELS IN MORBIDLY OBESE PATIENTS RECEIVING ENOXAPARIN. Christopher Kennie-Richardson, Michael Ezebuenyi. Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

Purpose: There is a limited amount of available literature related to the proper dosing of enoxaparin in morbidly obese patients. The lack of clinical evidence and consensus standardized approach in regard to the dosing of enoxaparin in this patient population has led to poor clarity regarding which dosing regimen is most appropriate. Our hospital currently utilizes capped initial treatment dosing of enoxaparin at 150 milligrams twice daily and daily in renal insufficiency; leading to a possibility of suboptimal dosing and subtherapeutic anti-factor Xa levels. The goal of this project is to evaluate the required enoxaparin dose and time to reach therapeutic anti-factor Xa levels in morbidly obese patients.

Methods: This study is a single center retrospective electronic review of patient charts from April 2017 to October 2018. The electronic medical record system was utilized in order to identify eligible patients. Eligible patients included individuals aged greater than or equal to 18 years of age with a body mass index greater than 35 kg/m² or total body weight greater than 150 kg and having received treatment doses of enoxaparin. Data collected includes the initial enoxaparin dose, initial anti-factor Xa level, enoxaparin dose at goal anti-factor Xa level, the time (in days) to reach therapeutic anti-factor Xa levels, and length and cost of hospitalization. Descriptive statistics along with
other relevant statistical tests are being utilized in the analysis of data.

**Results:** A total of 85 patients met inclusion criteria. Ten of eighty-five patients (11.8%) had anti-factor Xa levels monitored during admission. Of those 10 patients with levels monitored, 2 of 10 (20%) had therapeutic initial anti-factor Xa levels, 4 of 10 (40%) had subtherapeutic levels, and 4 of 10 (40%) had supratherapeutic levels. Patients with subtherapeutic initial levels required an average of 3.5 days to become therapeutic while those with supratherapeutic initial levels required an average of 4.7 days. Eight of the ten patients from the subgroup population had a pharmacy consult associated which eventually led to therapeutic levels 88% of the time. The most common indications were for treatment of deep vein thrombosis (29%) and pulmonary embolism (25%). Final analysis is in progress, and final data will be presented.

**Conclusion:** Preliminary results show that implementation of an automatic consult to pharmacy may lead to an improvement in attainment of therapeutic anti-factor Xa levels and a decrease in hospital length of stay.

PL XII-19 – OPEN

**XIII-A – MEDICATION-USE SAFETY, PHARMACY SYSTEMS & OPERATIONS**

PL XIII-1
TO EVALUATE AND ASSESS ACUTE KIDNEY INJURY (AKI) IN ADULT HOSPITALIZED PATIENTS RECEIVING THE COMBINATION OF VANCOMYCIN AND PIPERACILLIN/TAZOBACTAM FOR MORE THAN 48 HOURS. Morrison, P., Gerard T., Orchard L., East Jefferson General Hospital, Metairie, Louisiana.

**Purpose:** The purpose of this project is to look at the incidences and severity of AKI due to the combination of vancomycin/piperacillin/tazobactam in patients at East Jefferson General Hospital admitted from January 1, 2017 through December 31, 2017. The secondary goal is to look at the confounding variables that may have increased the toxicity of this drug combination.

**Methods:** A retrospective chart review will be done. The primary group for analysis will be patients without a history of renal dysfunction prior to the administration of vancomycin, piperacillin/tazobactam, or the combination. It is unlikely that the research will find patients on vancomycin or piperacillin/tazobactam monotherapy, therefore two subgroups for vancomycin will be analyzed; vancomycin plus non-nephrotoxic antibiotics or vancomycin plus a nephrotoxic antibiotic. Two similar groups will also be analyzed for piperacillin/tazobactam cross referencing these groups with the presence or absence of acute risk factors for AKI. Statistical analysis of the results will be reviewed after data collection of retrospective chart reviews.

**Results:** To be presented

**Conclusion:** To be presented

PL XIII-2
EVALUATING THE EFFECTIVENESS OF AN EDUCATIONAL TOOL IN ASSISTING PHARMACISTS IN CANCER TREATMENT MANAGEMENT. Krisgel Padolina, Sondra Davis, Kathryn Reynolds, Medical City Arlington, Arlington, TX.

**Purpose:** Chemotherapy regimens are often complex and composed of multiple medications. As medication experts, pharmacists play a crucial role in managing cancer treatment and chemotherapy-related adverse events. However, coordinating a chemotherapy regimen based on patient-specific clinical parameters, managing chemotherapy-induced adverse events, and administering supportive care can be challenging. The objective of this study was to determine the effectiveness of an educational tool in enhancing a pharmacist’s knowledge and skills in managing cancer treatment and drug-related adverse events.

**Methods:** This study was approved by the Institutional Review Board. The study period was ten weeks. All pharmacists involved with cancer treatment in a 382-bed community hospital were asked to voluntarily participate in the study. Participants were asked to create a unique code in order to both link the participants’ initial and final survey results and maintain confidentiality. In the beginning of the study period, participants completed an initial survey administered electronically via SurveyMonkey. The survey included fourteen multiple choice questions relating to the intricacies of oncology treatment and chemotherapy-induced adverse events. An education tool was then provided to the participants to assist in oncology treatment and management of chemotherapy-induced adverse events. The educational tool included the names of chemotherapeutic agents, doses, administration instructions, supportive care, and information on chemotherapy-induced adverse events. At the end of the study period, the participants completed the same survey administered in the beginning of the study period. The results of the initial and final survey were compared to evaluate the effectiveness of the educational tool.

**Results:** Eight pharmacists participated and completed the initial and final survey. Of the fourteen questions from the initial survey, nine (64.3%) had an increase, three (21.4%) remain unchanged, and two (14.3%) had a decrease when compared to the final survey. The greatest improvements were observed in dosage related questions while the decreases were seen in questions related to the management of chemotherapy-induced adverse events. The average score of the initial survey was 73% while the average score of the final survey was 85%, demonstrating a difference of 12%.

**Conclusion:** The education tool increased the participants’ overall assessment average, demonstrating its positive impact.

PL XIII-3
PHARMACY IMPACT ON NARCOTIC OVERRIDES IN A COMMUNITY HOSPITAL EMERGENCY DEPARTMENT. K. Alexandra Ehrhart, Carly Holmes, Brian Hughes, Jason Carter, Kyle Hurley, Norman Regional Health System, Norman, OK.

**Purpose:** In the emergency department, narcotics are often removed from automated dispensing cabinets via override, or without an associated order, which increases the risk for error, and possible harm, to patients. In an effort to increase
patient safety and ensure appropriate documentation, when a narcotic is removed via override, pharmacy staff must review the medical record to verify that the medication removed and administered was the correct drug and dose, if an order existed, and if a follow-up order was entered. This time-consuming process can result in decreased productivity in the pharmacy.

Methodology: This study has been approved by the Institutional Re view Board (IRB). The purpose of this study is to determine why narcotic medications are removed from the automated dispensing cabinet via override in the emergency department and how pharmacy involvement can decrease these overrides. This is a retrospective and observational non-randomized study that will utilize the electronic medical record (EMR) to identify patients in the emergency department who have had narcotic medications removed from automated dispensing cabinets via override. The following data will be collected: which medications were removed via override, if there was a documented order for the medication, if the drug and dose administration documentation matched the order, if a follow-up order is needed, the documented reason for the override, and which nurse removed the medication. The information will be analyzed to determine what issues need to be targeted and will provide direction for a plan to correct these issues. All patient information will be de-identified and kept confidential.

Results: Research in progress.

Conclusion: Research in progress.

PL XIII-4
EVALUATION OF THE MEDICATION RECONCILIATION PROCESS FOLLOWING CARDIAC SURGERY. Phillip Cook, Brian Gulbis, Phillip Weeks, Memorial Hermann – Texas Medical Center, Houston, TX.

PURPOSE: Many patients undergoing cardiac surgery are on antihypertensive and anticoagulant medications prior to surgery, but administration in the post-operative time period may result in prolonged hypotension, bleeding, or other complications. Currently, there is no formal medication reconciliation process at our institution when patients transfer from the operating room to the intensive care unit. Our objective is to assess the current medication reconciliation process following cardiac surgery and implement interventions to prevent continuation of inappropriate pre-operative medications.

METHODS: We conducted a single-center retrospective chart review on patients who received non-elective inpatient coronary artery bypass graft surgery, surgical valve replacements, or combination procedures between July 1, 2018 and August 31, 2018. Baseline data was disseminated to leadership and providers to inform them of the current problem and solicit multidisciplinary input for process improvement. Post-intervention data collection is ongoing.

RESULTS: An analysis of 53 patients from the baseline time period was performed. Of the 37 cases performed by the cardiovascular surgery service line, 20 (54.1%) patients met criteria for a medication reconciliation upon transfer to the intensive care unit (ICU). 16 cases were performed by the heart failure surgery service line; of these patients, 9 (56.3%) met criteria for a medication reconciliation upon transfer to the ICU. In total, 40 patients were found to have hemodynamic instability post-procedure; of these patients, 14 (35%) had an active order for an antihypertensive. Out of 32 patients who had evidence of bleeding, 4 (12%) had an active order for an antithrombotic. Potential interventions currently underway include staff education regarding baseline data and addition of a medication checkbox to the OR handoff sheet to facilitate assessment of pre-operative medications remaining on the medication administration record. Our goals are to increase the medication reconciliation percentage of patients undergoing CABG or surgical valve replacements to ≥80%, reduce the percentage of patients with an active order for a contraindicated medication to <10%, and prevent any administrations of a contraindicated agent.

CONCLUSION: Based on baseline data, variation in the medication reconciliation process following cardiac surgery exists. Limiting this variation and improving upon the current process may prevent inappropriate administration of medication and reduce the amount of time spent by staff charting exceptions or correcting orders. Implementation of an intervention at ICU handoff is ongoing.

PL XIII-5
BROAD-SPECTRUM ANTIMICROBIAL UTILIZATION AFTER NEW ELECTRONIC MEDICAL RECORD (EMR) IMPLEMENTATION. Bobbi Jo Loflin, Laura Nelson, Claudia Kamper, INTEGRIS Baptist Medical Center. Oklahoma City, OK.

PURPOSE: Electronic medical records (EMRs) and their functionalities can play a vital role in the prescribing habits of providers. When dealing with antimicrobials, this is important because inappropriate antimicrobial use in healthcare institutions contributes to an increase in the incidence of multi-drug resistant organisms and ultimately morbidity and mortality. Use of a new EMR with capabilities for increased interprofessional collaboration as well as improved ordering and patient history features is hypothesized to decrease broad-spectrum antimicrobial use. The objective of this retrospective chart analysis is to compare the timeframe to de-escalation of initial courses of broad-spectrum antimicrobials before and after implementation of a new EMR.

METHODS: This analysis will identify patients from INTEGRIS Baptist Medical Center by EMR. Patient charts will be accessed using both Cerner and Epic electronic medical records. Data will be compared before and after implementation of a new EMR between the dates July 1, 2015 and December 31, 2015 and July 1, 2017 and December 31, 2017. RESULTS: An interim analysis of all patients on ampicillin and sulbactam therapy was performed. This included 241 subjects. Rates of ampicillin and sulbactam ordering overall had increased from 74 orders to 167 orders. When using Cerner, the average time to de-escalation was 3.44 days. By moving to Epic this had decreased to 2.48 days for a difference of 0.96 days or 23.04 hours (p = 0.023). In addition, the percentage of inpatient stay days spent on broad-spectrum antimicrobial therapy decreased from 73% to 48% (p = 0.0001). In 2015 prescriber classifications with the highest average ampicillin and sulbactam days of therapy include pulmonary (6 days), otolaryngology (4.9 days), and cardiothoracic surgery (4.3 days). This trend differed in 2017 with the highest average days of use being attributed to cardiology (6.61 days), infectious diseases (5.73 days), and pulmonology (4.95 days).

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CONCLUSION: Based on the interim data, switching EMRs from Cerner to Epic has led to increased ordering, but decreased length-of-treatment in one broad-spectrum antimicrobial.

PL XIII-6
IDENTIFYING STRATEGIES FOR ADHERENCE IMPROVEMENT AND INTERVENTION IMPLEMENTATION: AN ASSESSMENT OF PHARMACY TEAM PERCEPTIONS. Beatty, A., Hudson R., Varkey D., Walgreens Co., University of Houston College of Pharmacy, Houston, TX.

PURPOSE: To identify facilitators and barriers faced by members of the pharmacy team to implementing medication adherence interventions in community chain pharmacies and describe opportunities of improvement for training and supportive resources. Pharmacy team members are tasked with providing quality and impactful services targeted at increasing adherence and proportion of days covered (PDC) for patients. However, improving adherence begins with evaluating behaviors and addressing barriers including those faced by healthcare providers. The study sets out to identify the perception on barriers and improvements that can be implemented in community chain pharmacies to enhance the impact pharmacy team members have on patient medication adherence, ultimately leading to the improvement health outcomes and decreased healthcare cost.

METHODS: A prospective analysis of an employee survey will be used to determine and assess pharmacy team member perceptions regarding the implementation of medication adherence interventions. Individuals over the age of 18 years who are currently employed and practicing at a large chain pharmacy will be eligible to complete the survey. This includes pharmacy technicians, pharmacist interns, pharmacists, pharmacy managers, store managers, district managers and field leadership across a designated number of stores in Texas, Louisiana and Mississippi. All eligible pharmacy team members will be asked to complete an online survey via email communication. The goal sample size of this study will be 100 team member surveys. Data will be collected over the course of 8 weeks and include: de-identified demographics and team member responses to survey questions related to preparation and training, knowledge of adherence and related terms, experience with adherence improving measures and techniques, and current perceptions of facilitators, barriers, and area of improvement regarding intervention implementations.

RESULTS: The results of the survey will undergo descriptive analysis to determine the trends of the responses. Statistics provided will include counts and percentages for categorical variables and means and standard deviations for continuous variables. There are no explicit planned comparisons, however, some exploratory comparisons may be conducted. This may include perception comparisons based on primary location site or work position.

CONCLUSIONS: The survey responses will contribute to the quality, development and improvement of medication adherence services provided to patients in community chain pharmacies. The exploratory data collected is expected to propose future directions for assessing correlations of poor adherence performance in the community setting and provide a framework for addressing perceptions of barriers and improvements that can be implemented in community chain pharmacies to enhance the impact pharmacy team members have on patient medication adherence.

PL XIII-7
COMPARISON OF EFFICACY BETWEEN INTRAVENOUS PUSH AND INTRAVENOUS PIGGYBACK ADMINISTRATION OF β-LACTAM ANTIBIOTICS. Diem Ho, Violet Y-Nha Nguyen, Justin Gonzalez, Tuyen Huynh, Valley Baptist Medical Center – Brownsville, Brownsville, TX.

PURPOSE: β-lactam and cephalosporin are often given intravenously (IV) as intermittent infusions over 30 minutes to 1 hour to optimize their time-dependent bacterial killing activity. While the Federal Drug Administration has approved cefazolin, cefazidime and aztreonam for IV push (IVP) administration based on practice improvement and safety data, cefepime and ceftiraxone are only approved for IV infusion in small volume piggybacks (SVPs). Due to the national shortage of SVPs, in January 2018, our institution implemented a policy to administer cefazolin, ceftiraxone, cefazidime, cefepime, and aztreonam as IVP to conserve SVPs per the American Society of Health-Systems Pharmacists’ recommendation. The purpose of this study is to compare the efficacy of IVP versus intravenous piggyback (IVPB) administration for antibiotics with time-dependent bacterial killing activity.

METHODS: This is a retrospective study of adult patients who received at least 48 hours of the studied antibiotics as IVPB between January 1, 2017 and December 31, 2017 or IVP between January 1, 2018 and December 31, 2018 for pneumonia, urinary tract, intra-abdominal, or skin and soft tissue infections. The studies antibiotics included cefazolin, cefepime, ceftazidime, ceftiraxone, and aztreonam. Patients were excluded if their cultures grew pathogens resistant to their antimicrobial regimen, were pregnant or breastfeeding, or were discharged to hospice or palliative care services. The primary outcome is the percentage of patients achieving clinical improvement within 72 hours of studied antibiotic initiation. Clinical improvement is defined as achievement of at least two of the following criteria for at least 24 hours: temperature between 96.8°F and 100.4°F, heart rate less than 90 beats per minute, respiratory rate less than 20 breaths per minute or PaCO2 more than 32 mmHg , WBC between 4,000 and 12,000/μL, and discharged to home or long term care facility. The secondary outcomes include the percentage of patients requiring escalation of antibiotic therapy after being on studied drugs for 72 hours and duration of studied antibiotics.

RESULTS: Between January 1, 2017 to December 31, 2018, 91 patients were included in the IVPB group and 88 patients were included in the IVP group. All patients in both groups had cultures susceptible to their prescribed antibiotic regimens. There was no significant difference in the clinical improvement between the IVPB versus the IVP group, 86 (95%) vs. 77 (88%), p = 0.17. For the secondary outcomes, the rates of antibiotic escalation and the median duration of antibiotic therapy were similar between the two groups (p = 0.12 and p = 0.85, respectively).

CONCLUSION: No difference in clinical improvement was observed between IVP and IVPB administration of aztreonam, cefazolin, cefazidime, ceftiraxone, and cefepime when using for pneumonia, skin and soft tissue, intra-abdominal, and urinary tract infections.
PL XIII-8
REDUCING BREAST CANCER MORTALITY AMONG AFRICAN AMERICAN WOMEN WITH HEALTH DISPARITIES. Farida Allam, Jamalena Thompson, and Rodney Hunter, Texas Southern University College of Pharmacy and Health Sciences, Houston, TX.

PURPOSE: The purpose of this study is to reduce breast cancer mortality by addressing health disparities within the African American and other financially disadvantaged communities by increasing access to quality and timely care, and improving outcomes through patient navigation. We anticipate serving 120 women for screening mammogram and 150 women in group education sessions held in our breast cancer screening and prevention clinics (BCSPC). The expected outcomes include an increase in patients being screened for the first time and an increase in breast cancer awareness and education.

METHODS: Through the implementation of breast cancer screening and prevention clinics, evidence based, literacy level-appropriate breast cancer awareness, as well as education on the importance of breast cancer screening were provided. The key activities included educational sessions, low and no-cost screening and diagnostic mammograms, and patient navigation to the appropriate facilities following abnormal screening results. In partnership with the National Black Leadership Initiative on Cancer (NBLIC) and Susan G. Komen, Texas Southern University (TSU) pharmacists-led BCSPC were held on campus and multiple community centers throughout Houston’s third ward. Recruiters and health care workers, trained at the University of Texas Memorial Hermann Cancer Center, were employed to provide customer service and increase breast cancer screening/diagnosis rate by scheduling appointments and navigating patients. The NBLIC partnership offered expanded community engagement and breast cancer awareness, increasing the number of patient attendance throughout the fifth ward community. Susan G. Komen resources were used for education and increase awareness of breast cancer incidence. Patient navigators contacted all women within three business days of abnormal result availability from the mammograms preformed during the visits. BCSPC, and scheduled a follow-up appointment at either The Rose or University of Texas Memorial Hermann Cancer Center. Workups were completed within 60 days of initial screening mammogram result.

RESULTS (IN PROGRESS): To date, there has been 19 education and screening clinics held, with 15 more future clinics scheduled. There have been 86 one-on-one sessions, and 2 group sessions, so far. Breast self-awareness and available breast health services and resources were offered to a total of 318 individuals. Among those that were screened (N=100), about 59% of them were never screened, 23% had a screening between 2 to 5 years ago, 15% have had a screening less than 2 years ago, and 3% haven’t had a screening in over 5 years.

PRELIMINARY CONCLUSIONS: Study results provide initial evidence to support the efficacy of collaborative efforts of a pharmacist led breast cancer clinic in the improvement of breast cancer screening quantity and education within a underserved and health despaired community. While the results are encouraging, future research is underway and warranted to assess the effect in other communities, as well.

PL XIII-9
PHARMACIST ROLE IN OPTIMIZATION OF PD-L1 PRODUCT SELECTION BASED ON REIMBURSEMENT DATA. Kathleen M. Sullivan, Jerri Cody, Norman Regional Health System, Norman, OK.

PURPOSE: Pharmacists are the medication expert on the healthcare team and can assist in medication selection in a variety of ways. The following study will be a pilot investigation on reimbursement data for programmed death ligand products, specifically nivolumab and pembrolizumab. Norman Regional Health System oncologists have identified the need for financial optimization due to their similar efficacy in non-small cell lung cancer and varying reimbursement rates. The objective of this study is to use reimbursement data to help guide the medication selection when either is clinically appropriate.

METHODS: This is a retrospective study reviewing billing and clinical information for patients in the Norman Regional Health System outpatient oncology clinic that received either nivolumab and pembrolizumab for non-small cell lung cancer during the dates of April 2018 through September 2018. The data collected included insurance information, medication, dose, infusion time, diagnosis, cost of medication and reimbursement. We then analyzed total cost to the healthcare system compared to reimbursement. The results of preferred products based on cost and reimbursement for major payors will be formulated and communicated to the oncologists in the oncology clinic. A follow up analysis will be done to evaluate cost savings.

RESULTS: There were a total of 128 patient accounts reviewed, with 43 individual patients. Patient accounts were excluded if the medication was given inpatient or if the major payor only provided bundle payments, leaving a total of 38 patients reviewed. Of these, 10 patients received pembrolizumab and 28 patients received nivolumab. The Experian Payor Reimbursement Estimator predicted that pembrolizumab would have a higher reimbursement across all of the insurance payors and pembrolizumab. Analysis of our Explanation of Benefits confirmed that pembrolizumab did indeed have a higher reimbursement across all of the insurance payors analyzed for an average reimbursement of 42% higher than nivolumab.

CONCLUSION: Based on the data we have collected and analyzed thus far, Norman Regional Health System receives higher reimbursement from patients treated with pembrolizumab compared to nivolumab.

PL XIII-10
EFFICACY AND SAFETY OF ON-BODY INJECTOR PEGFILGRASTIM. Gaines Kyna Gania, Emily Taylor, Jessica Stover, Joseph Armingier, Ochsner Medical Center, New Orleans, LA.

PURPOSE: Pegfilgrastim is a colony stimulating growth factor used to prevent febrile neutropenia. There are currently two Food and Drug Administration approved methods of administration: subcutaneous manual injection or the on-body injector. There is limited literature assessing the efficacy and safety between the two forms of
pegfilgrastim. The purpose of this study is to compare the number of febrile neutropenia admissions per administration of pegfilgrastim using the subcutaneous manual injection and the on-body injector.

METHODS: This retrospective, Institutional Review Board-approved chart review evaluated patients who received pegfilgrastim with a chemotherapy regimen associated with a high risk of febrile neutropenia from January 1, 2017 to August 31, 2018. Patients who are at least 18 years old and have a non-myeloid malignancy were included. Exclusion criteria included history of serious allergic or hypersensitivity reactions to pegfilgrastim, filgrastim, or acrylic adhesives; receiving pegfilgrastim less than 24 hours or greater than 72 hours after receiving chemotherapy; pregnancy; receiving radiation within the past 2 weeks; or receiving other investigational products or devices during this study. The primary endpoint is the mean number of febrile neutropenia admissions per administration of pegfilgrastim compared between both routes of administration. Secondary endpoints are but are not limited to the mean number of days of intravenous antimicrobials per administration of pegfilgrastim, percentage of pegfilgrastim on-body injector device failures, and the adverse event rates. The primary endpoint was analyzed using a logistic regression model with a statistical significance level of 0.05.

RESULTS: Data analysis is currently in progress.

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

PL XIII-11 ASSESSMENT OF HIGH VERSUS LOW VENOUS THROMBOEMBOLISM RISK FOR ASPIRIN THROMBOPROPHYLAXIS IN MULTIPLE MYELOMA PATIENTS RECEIVING LENALIDOMIDE THERAPY. Molli Gremillion, PharmD, Jill Comeau, PharmD, BCOP, Lauren Coker, PharmD, BCPS, Dylan Leblanc, PharmD, Kelsey Trimble, PharmD, Samip Master, MD; Ochsner LSU Health Shreveport, Shreveport, LA.

PURPOSE: Patients with hematological malignancies have been shown to be at increased risk for venous thromboembolism. In multiple myeloma, immunomodulatory drugs (IMiDs) like lenalidomide, pomalidomide, and thalidomide further increase thromboembolic risk in these patients. Based on the NCCN guidelines, options for VTE prophylaxis in patients being treated with an IMiD include: low molecular weight heparin (LMWH), full dose warfarin, and aspirin. Aspirin is an attractive option for VTE prophylaxis because of its ease of administration and lack of therapeutic drug monitoring required compared to low molecular weight heparin and warfarin. Aspirin is not currently recommended by NCCN guidelines as an option for thromboprophylaxis in patients who are at high risk for VTE, but it is currently being prescribed as such in clinical practice despite guideline recommendations.

METHODS: This is a single-center, retrospective chart review of patients age 18 to 89 years receiving lenalidomide treatment for multiple myeloma and aspirin for thromboprophylaxis between January 1st, 2013, and July 31st, 2018, at a tertiary academic medical center. This study has been approved by the Institutional Review Board. Patients were excluded if they were children, pregnant, prisoners, had an allergy to aspirin, were diagnosed with atrial fibrillation, or were concurrently prescribed any anticoagulant, received radiotherapy, or had a surgical procedure during lenalidomide treatment. The following data was collected from each patient chart: MRN, DOB, gender, race, BMI, myeloma stage, Hgb < 10 g/L, ESA use, ECOG score, risk category, number of risk factors, start and duration of lenalidomide therapy, treatment regimen, start and duration of aspirin therapy, dose of aspirin, date of VTE, type of VTE, secondary cancer and stage, smoking status, concurrent estrogen replacement therapy. The primary objective of this study is to describe incidence of thromboembolism in patients categorized as high risk compared with low risk, for VTE, who are receiving aspirin thromboprophylaxis and lenalidomide treatment for multiple myeloma. The secondary objectives are to describe the incidences of DVT and PE. Time to first VTE while on aspirin and lenalidomide was also calculated and compared between high risk and low risk groups, as well as, association between aspirin dose and VTE rates. This data will be used to determine aspirin is adequate for thromboprophylaxis in patients taking lenalidomide for multiple myeloma.

RESULTS: To be presented

CONCLUSION: To be presented

PL XIII-12 EVALUATION OF THE USE OF NON-FORMULARY ONCOLOGY MEDICATIONS RESTRICTED TO OUTPATIENT USE IN HOSPITALIZED PATIENTS AFTER IMPLEMENTATION OF A CRITERIA-FOR-USE ALGORITHM. Hope Randle, Leticia V Smith, Eimeira Padilla-Tolentino. Seton Healthcare Family, Austin, TX.

PURPOSE: Annual spending on chemotherapy agents is estimated to cost upwards of $100 billion dollars and is predicted to rise to greater than $150 billion by 2020. Within the US, the average price of a novel anticancer drug is estimated to be upward of $100,000 per year of treatment. Oncology drugs account for the largest spending of any specialty and the cost of treatment only seems to be increasing with time. This study will evaluate the use of an algorithm limiting use of specific chemotherapy agents to outpatient use and its effect on inpatient hospital spending and patient outcomes.

METHODS: This is a single-center, retrospective cohort cost evaluation study. Adult oncology patients receiving antineoplastic drugs of interest between January 1, 2013 and December 31, 2018 will be identified through an internal report. Electronic medical records will be used to gather additional data, including cancer diagnosis, chemotherapy regimen, rescue therapy use, patient demographics, and clinical outcomes. The primary outcome will be number of inpatient orders for nonformulary antineoplastic agents. Secondary endpoints will include median length of stay, median day of first antineoplastic administration, mortality, median time to death, improvement in patient symptoms after treatment, and toxicities from treatment. This study has been approved by the Seton Institutional Review Board.

Results: In Progress

Conclusions: In Progress
**Purpose:** Vascular endothelial growth factor (VEGF) inhibitors work by inhibiting angiogenesis and slowing tumor growth. A major side effect of VEGF inhibitors is hypertension that requires blood pressure monitoring. The purpose of this study is to evaluate our institution’s practices of monitoring, identifying, and treating patients’ VEGF inhibitor-associated hypertension.

**Methods:** This institutional review board approved, retrospective, single-center, chart review assessed patients’ blood pressure measurements who received any of the six VEGF inhibitors: bevacizumab, ramucirumab, sorafenib, regorafenib, sunitinib, or pazopanib. Patients were excluded if they were less than 18 years old, received VEGF inhibitors for non-oncologic indications, received VEGF inhibitors at other institutions, and lost to follow up, which was defined as patients who do not appear to clinic appointment at our institution within six weeks of starting VEGF inhibitor therapy. The primary objectives were to determine if VEGF inhibitor-associated hypertension was treated at our institution and the time to first pharmacologic intervention. Treatment was considered if an antihypertensive was added or increased, an adjustment in VEGF inhibitor, or discontinuation in VEGF inhibitor was implemented. The secondary objectives were to assess the incidence of VEGF inhibitor-associated hypertension, to evaluate time to development or exacerbation of hypertension, to assess the time to second pharmacologic intervention, including addition of an agent or increasing a current agent, and to assess the achievement of goal blood pressure.

**Results:** Patient characteristics include: 53.8% diagnosed with hypertension prior to chemotherapy initiation, 56.4% diagnosed with colon or rectal cancer, and 66% received bevacizumab. Forty-six percent of patients developed hypertension and only 50% of those patients were treated for hypertension. Most were treated by adding or increasing antihypertensive agents. Only 1 patient experienced hypertensive crisis that required hospital admission. Final analysis is in process and will be presented.

**Conclusion:** Based on preliminary results, intervention is needed to treat VEGF inhibitor-associated hypertension in cancer patients.

**Purpose:** To determine the quality and financial outcomes associated with a medication history technician obtaining a medication history on admission.

**Methods:** Medication histories completed by either a nurse or physician and then later by a technician were reconciled for discrepancies. Variations in these histories were compiled and categorized by both error type and severity. Financial information based on literature reported cost of medication errors was used to extrapolate the projected financial savings of technician driven medication histories. Utilization of data mining software was leveraged to pull broad trends in length of stay, 30 day readmissions, and cost of stay for patients with a technician collected medication history versus standard of care.

**Results:** Research in progress. A preliminary review of 60 charts indicated the average number of identified discrepancies is 3.4 discrepancies per history. Estimated financial savings was estimated at $230 dollars per history.

**Conclusion:** Preliminary outcomes seem to indicate a favorable trend in accuracy when analyzing medication histories completed by technicians versus standard of care.

**Purpose:** Numerous studies have demonstrated a reduction in medication errors by having a pharmacist obtain medication histories in the emergency department (ED). Newly obtained funding allowed for the hiring of an additional full-time pharmacist and expanded coverage hours in the emergency department. The purpose of this study is to examine the value this has provided to the organization by comparing medication history rates before and after expansion of pharmacist coverage hours in the emergency department. Additionally, remaining gaps and their workload consequences for other members of the healthcare team will be identified.

**Methods:** The electronic health record system will be used to identify adult patients admitted to various intensive care units (ICUs) from the emergency department in a four-month period following the expansion of pharmacist coverage in the emergency department. Data analysis will target patients admitted outside of the hours for pharmacist coverage who did not have their home medication history completed by the emergency department pharmacist. The electronic health record system will also be used to collect
the total number of medication histories completed by the emergency department pharmacists during those four months. Results will be compared to the total number of medication histories completed and patients admitted to the same intensive care units outside of pharmacist coverage from the same date range of the previous year. Further analysis will determine if any adjustment in coverage hours would provide additional benefit in the number of medication histories completed and will possibly provide justification for further expansion in the coverage hours.

RESULTS: Preliminary data shows 34 patients admitted to included ICUs through the ED from September 1-October 31, 2018. Nine patients (26.4%) did not have their medication histories performed by the ED pharmacist.

CONCLUSIONS: Conclusions regarding study results to date will be presented.

PL XIII-17
EPIC I-VENT OPTIMIZATION TO MEASURE CLINICAL PHARMACIST PRODUCTIVITY. Oge Amaka, Oliver Egwim, Goldina Erowele, Shaji Varghese. Harris Health System, Houston, TX.

PURPOSE: Clinical pharmacists play a crucial role in intercepting potential medication errors and ensuring that each patient receives the appropriate therapy for the appropriate indication. Productivity tracking has become an important part of pharmacy departmental budgeting in an effort to control increasing drug-related costs. Although many meaningful interventions are being documented daily, there are also numerous interventions that lack substance. The purpose of this project is to streamline I-vent types in an effort to increase our ability to measure clinical pharmacist productivity. Additionally, I-vents will be used to evaluate the pharmacoeconomic impact of clinical pharmacy interventions, as we currently lack a method of collecting and displaying cost savings and/or cost avoidance achieved.

METHODS: Vizient member institutions utilizing Epic for their electronic medical records were surveyed to gauge whether or not other institutions use the I-vent platform for clinical intervention documentation. The survey determined that 80% (n=10) of respondents document using I-vents. Following optimization of I-vents at Harris Health System, pharmacists will be trained and provided with tools to allow for accurate and appropriate documentation. Financial impact of interventions will be quantified by assigning an associated cost avoidance to relevant interventions based on available literature.

RESULTS: Research in progress

CONCLUSION: Research in progress

PL XIII-18
EFFECTS OF PRESCRIBING A COPD RESCUE KIT ON HOSPITAL READMITHION RATES. Cassidy Loving, Jean G. Dib. CHRISTUS Trinity Mother Frances Tyler, Texas.

Background: Chronic Obstructive Pulmonary Disease affects more than 16 million Americans. Medical costs for this disease are exceptionally high with an average cost of $11,000 per readmission. Currently, 30-day readmission rates are estimated to be 17.3% for COPD diagnosis-and 20.5% for all-cause readmission.

Objective(s): This study aims to assess the effectiveness of COPD rescue kits in reducing readmission rates.
Method(s): This study is a retrospective and prospective review of patients who were hospitalized with a COPD exacerbation. Patients who received a COPD kit were evaluated against patients that did not receive a kit (control group) at discharge. The COPD kit program was initiated in October of 2018. The control group included patients who were admitted from October 2017 to February 2018. The COPD rescue kit contains a 5-day supply of prednisone, spacer, MDI albuterol inhaler, and symptom zoning educational chart. Chi-square tests were used for the comparative analysis of different variables.

Preliminary Result(s): The primary outcome of all-cause readmissions at 30 days was 24% in the control and 13% in patients that received the intervention (p<0.07). The secondary outcome of 30-day readmissions based on COPD exacerbations was 15% in the control group and 6% in patients that received the intervention (p<0.04). 90-day
readmission rate results are pending the completion of data collection in April of 2019.

**Conclusion(s):** The COPD Rescue Kits showed a decrease in both all-cause and COPD hospital readmissions rates at 30 days. The difference in the control and intervention group for readmissions due to COPD was statistically significant.

### PL XIII-19 - OPEN

**XIVA – PEDIATRICS/NEONATOLOGY / TRANSITIONS OF CARE**

**PL XIV-1**

**CHARACTERIZATION OF EMPIRIC ANTIMICROBIAL SELECTION AND ITS IMPLICATIONS IN HOSPITALIZED PEDIATRIC CYSTIC FIBROSIS PATIENTS.** Jillian Grapsy, Ching-Sui Ueng, Aimee Dassner, Karisma Patel, and Preeti Sharma. Children’s Medical Center Dallas, Dallas, TX.

**PURPOSE:** The Cystic Fibrosis Foundation has a guideline for the treatment of cystic fibrosis (CF) pulmonary exacerbations, but the guideline is only geared towards the selection of antimicrobials targeting *Pseudomonas* spp. Consensus guidelines do not address the clinical impact of selecting empiric antimicrobial regimens based solely on a CF patient’s culture history regardless of the time from last growth of the organisms. This study aims to characterize the empiric antimicrobial prescribing patterns that are driven by patient-specific organism growth histories.

**METHODS:** This retrospective study was an electronic chart review of patients ages 21 years and younger hospitalized for CF-related pulmonary exacerbations at Children’s Medical Center Dallas over a two-year period. Patient demographics, lengths of stay, laboratory results, pulmonary function tests, and microbiologic history were collected.

**RESULTS:** Of 300 screened encounters, 153 met inclusion criteria (n=153). The median patient age was 12.8 years old (2 months-19 years), and median length of stay was 13 days (2-29 days). Empiric antimicrobial selection were chosen to cover a median timeframe of 9.8 months (2 days-12 years) of patient-specific microbiological history. Empiric antimicrobial selection was more likely to extend beyond one year since last growth for *S. maltophilia* and *P. aeruginosa.* In total, 175 organisms were isolated from respiratory cultures during 153 patient admissions. Of these isolates, 89% (n=136) were susceptible to the selected empiric antimicrobial regimen. Reasons for bug-drug mismatch (n=17, 11%) were emergence of new resistance (n=10), isolation of a new pathogen (n=4), and provider discretion in antimicrobial selection (n=3). Additional data regarding clinical outcomes will be evaluated and presented.

**CONCLUSIONS:** Most empiric antimicrobial regimens covered the organism(s) isolated within the previous year. However, empiric antimicrobial selection was more likely to extend beyond one year of patient-specific microbiologic history for patients with a history of *P. aeruginosa* and *S. maltophilia.* These findings suggest a potential role for a standardized approach to empiric antimicrobial selection for CF pulmonary exacerbations, with potential opportunities for antimicrobial stewardship.

### PL XIV-2

**MIXED LIPID EMULSION FOR PREVENTION OF PARENTERAL NUTRITION-ASSOCIATED LIVER DISEASE IN EXTREMELY LOW BIRTH WEIGHT NEONATES.** Celine M. Zhong, Jordan L. Burdine, T. Michele Tieman, Monica Huff, UTMB Health, Galveston, TX.

**PURPOSE:** To compare the clinical safety and efficacy of intravenous mixed lipid emulsions (MLE) versus soybean oil-based lipid emulsions (SLE) in the prevention of parenteral nutrition associated liver disease (PNALD) in extremely low birth weight (ELBW) neonates admitted to a level IV neonatal intensive care unit.

**METHODS:** Retrospective chart review of 43 patients to compare the safety and efficacy of MLE to SLE in ELBW neonates. Twenty-one patients were allocated to the MLE post-treatment arm and 22 patients were allocated to the SLE pre-treatment arm. Data was collected for patients who received a minimum of two weeks of therapy until discharge or a maximum of 16 weeks. Consent was not obtained due to the nature of a retrospective study design.

**RESULTS:** Parenteral nutrition therapy with MLE demonstrated less incidence of PNALD (23.8% vs. 40.9%) although mean peak conjugated bilirubin levels were not notably different between MLE and SLE treatment arms (6.4 mg/dL vs. 6.2 mg/dL). Mean liver function tests resulted in lower trends in the MLE treatment arm: alanine transaminase (42 U/mL vs. 66 U/mL), aspartate transaminase (88 U/mL vs. 111 U/mL), and alkaline phosphatase (424 U/mL vs. 406 U/mL). Lower incidence of bronchopulmonary dysplasia (66.7% vs. 81.8%), retinopathy of prematurity (72.4% vs. 81.8%), and late-onset, culture positive sepsis (9.5% vs. 18.2%) was seen with MLE therapy when compared to SLE. Patients demonstrated better growth in the MLE arm compared to SLE respectively, with mean growth velocities (14.5 g/kg/d vs. 12.3 g/kg/d). Cost-effectiveness parameters revealed reduced utilization of ursodiol (23.8% vs. 45.5%) and intravenous fish oil (9.5% vs. 31.8%).

**CONCLUSION:** MLE appears to exhibit potential hepatoprotective properties in ELBW neonates on long-term total parenteral nutrition. Use of MLE may result in less incidences of PNALD and is suggested to be cost-effective in long-term parenteral nutrition.

### PL XIV-3

**THE USE OF HIGHER DEXMEDETOMIDINE DOSES IN YOUNGER PEDIATRIC PATIENTS VERSUS OLDER PEDIATRIC PATIENTS.** Allison Reed, Marco Quispe Leveau, Edward Martel, Lauren Coker, Elizabeth Stephenson, Kelsey Trimble. Ochsner Louisiana State University Health, Shreveport, Louisiana.

**Purpose:** Pediatric sedation has a major role in pediatric patient care. Dexmedetomidine, an α2-adrenergic agonist approved by the Federal Drug Administration in 1999, allows for an opioid-free and benzodiazepine-free sedation. Few studies have been conducted to determine differences in optimal dosing between pediatric age groups. Our hypothesis is that patients ages 0-5 years require an increased dose of dexmedetomidine due to an increase in medication clearance. We will evaluate the different doses pediatric patients require to remain sedated in three different age groups (ages 0-5 years, 6-12 years, and 13-17 years) and...
this data will allow us to extrapolate the difference in clearance. By analyzing these age groups, we will be able to determine if pediatric patients ages 0-5 years clear dexmedetomidine more rapidly and thus require a higher dose to remain sedated safely.

**Methods:** This retrospective, observational cohort study, which was approved by the Louisiana State University Institutional Review Board, analyzes data over a five-year period between January 1, 2013 and July 31, 2018. The primary objective is to evaluate the dose of dexmedetomidine required for a patient to remain sedated in three different age groups (0-5 years, 6-12 years and 13-17 years). Secondary objectives are to compare the occurrence of hypotensive and bradycardia episodes in patients on dexmedetomidine monotherapy compared to patients receiving multiple medications for sedation. Additionally, the number of rescue fluid boluses and atropine received for these episodes are analyzed. Hypotension and bradycardia are defined by age per the 2015 Pediatric Advanced Life Support (PALS) guidelines. The study cohort is defined as all hospitalized pediatric patients eligible for and receiving dexmedetomidine. Eligibility criteria included patients 0-17 years old who were receiving dexmedetomidine for sedation during an intensive care unit (ICU) stay or during surgery and were sedated for 24 hours or more post-surgery.

Administrative data collection includes total dose of dexmedetomidine, dose of dexmedetomidine in mcg/kg/dose (average and maximum doses), length of time on dexmedetomidine in hours, reason for sedation, reason for hospital admission, number of episodes of hypotension and bradycardia, number of fluid boluses given, number of atropine doses given, ICU length of stay, and total inpatient length of stay. Covariates in the model includes age, gender, race, weight, utilization of a loading dose, other sedative medications, doses of other sedative medications (average and maximum doses), duration of other sedative medications, and Richmond Agitation and Sedation Scale (RASS) scores.

**Results and Conclusion:** Analysis is currently ongoing.

**PL XIV-4**

**Utilizing an Electronic Health Record System to Identify Key Areas for Improving Timely Antibiotic Administration for Early-Onset Sepsis within the Neonatal Golden Hour.** Ismael Rodriguez Jr., Alisha Barron-Clark, James Tyler, Jamie Morrison, Brenda H. Morris, CHRISTUS Trinity Mother Frances Health System, Tyler, TX.

**Purpose:** To identify key areas for process improvement to decrease time to antibiotic administration within the neonatal golden hour. The neonatal golden hour is the first hour of life for a newborn, and entails stabilizing the patient to decrease the incidence of negative short-term and long-term outcomes associated with prematurity and low birth weight. Timely administration of antibiotics for early-onset sepsis (EOS) is imperative as delayed antibiotic administration has been associated with poorer outcomes.

**Methods:** Retrospective data from the electronic health record system was utilized to identify neonates who received antibiotics for EOS in our institution’s NICU. Only patients who were born at CHRISTUS Mother Frances Hospital Tyler and received ampicillin and gentamicin within 24 hours were considered for the study. Newborns transferred from other facilities or units outside of the NICU were excluded. The processes occurring from the time of birth to the time of antibiotic administration were examined. Regression models will be utilized to identify key areas associated with delays in timely antibiotic administration.

**Results:** A total of 45 patients received ampicillin and gentamicin for EOS after NICU admission within the designated time period. Of these patients, 29 met all inclusion and exclusion criteria. None of the patients examined received antibiotics within the neonatal golden hour. The mean antibiotic administration time from birth was 322 minutes with a range of 116 to 1,266 minutes. Data analysis is currently ongoing.

**Conclusion:** The results from this study will be utilized to develop a process improvement plan. A secondary study will be conducted to compare clinical outcomes before and after implementation.

**PL XIV-5**

**Efficacy of Low-Dose Epinephrine Continuous Infusion in Neonates.** Gloria Lee, Cynthia Toy, Emily Rodman, Jeffrey Kaiser, Brady Moffett, Danielle R. Rios, Texas Children’s Hospital, Houston, TX.

**Purpose:** The lowest reported epinephrine continuous infusion dosing for neonatal patients found in literature is 0.05 mcg/kg/min. At a large, quaternary, free-standing children’s hospital, epinephrine is often initiated at doses <0.05 mcg/kg/min despite a lack of published literature of its efficacy. The purpose of this study is to determine the efficacy of low-dose epinephrine continuous infusion of doses <0.05 mcg/kg/min in neonates.

**Methods:** This is a single-center, retrospective chart review of neonatal patients who received continuous infusion of low-dose epinephrine, defined as doses <0.05 mcg/kg/min, between January 2011 to January 2018. Included subjects were those admitted to the Texas Children’s Hospital Newborn Center who were <44 weeks postmenstrual age when they received continuous infusion of low-dose epinephrine. Exclusion criteria was initiation of epinephrine before admission to Texas Children’s Hospital, unknown epinephrine starting dose, receipt of epinephrine through any route other than intravenous, receipt of bolus epinephrine, and infusion time of less than three hours. The primary outcome is percentage of subjects begun with low-dose epinephrine whose doses did not have to be titrated to ≥0.05 mcg/kg/min for the desired effect. Secondary outcomes include change in systolic (SBP), diastolic (DBP), and mean arterial blood pressure (MBP); urine output (UOP); and comparison of lactic acid, glucose, or base deficit levels prior to and after epinephrine initiation.

**Results:** A total of 131 distinct occurrences of low-dose epinephrine initiation were evaluated in 115 patients (57% male). Mean estimated gestational age and birth weight were 31.4 ± 6 weeks and 1739 ± 107 grams respectively with gestational age at epinephrine initiation 33.5 ± 5.9 weeks. Median (IQR) starting dose of low-dose epinephrine was 0.01 (0.01, 0.02) mcg/kg/min and maximum dose was 0.04 (0.02, 0.08) mcg/kg/min. Of the administrations, 55% were responders (i.e., maximum dose <0.05 mcg/kg/min). Subjects in this cohort demonstrated a significant improvement of SBP, DBP, and MBP (p<0.001). In addition, significant improvement was seen in UOP (p<0.001) with no difference in glucose (p=0.17), lactate (p=0.98), or base deficit (p=0.74) prior to and during
epinephrine infusion. After epinephrine infusion, fewer vasoactive medications were required than prior (p<0.001).

**CONCLUSION:** Administration of low-dose epinephrine infusion at doses <0.05 mcg/kg/min was efficacious in 55% of subjects in this cohort. No difference in monitored lab values was noted after epinephrine infusion. Given that there was significant improvement of SBP, DBP, MBP, and UOP, initiation of continuous epinephrine at doses < 0.05 mcg/kg/min may be considered in hypotensive neonates.

**PL XIV-6**
**DUPLICATE ANTIPYRETICS: DOUBLE THE TROUBLE OR DOUBBLE THE FUN?** Genene Alexis Wilson, Shannan Eades, Anand Gourishankar, Memorial Hermann – Texas Medical Center, Houston, TX.

**PURPOSE:** Acetaminophen and ibuprofen are commonly prescribed simultaneously for treatment of fever in pediatric patients without clarifying instructions as to when to administer each agent (i.e., duplicate indication). Medication management standards from The Joint Commission (TJC) and the Centers for Medicare and Medicaid Services (CMS) recommend clear and concise orders, as well as avoidance of therapeutic duplication in the patient’s medication regimen. Per these standards, organizations should discourage the ordering of both acetaminophen and ibuprofen as needed for fever without selection criteria for when to use each agent. Additionally, the American Academy of Pediatrics recommends against administering both antipyretic agents versus each agent alone. Prescribers at our facility order both acetaminophen and ibuprofen simultaneously as antipyretics without specifications for administration.

**METHODS:** This is a quality improvement project observing a pre- and post-intervention cohort between January 1, 2016 and April 1, 2018. Patients less than 18 years of age with concomitant orders for acetaminophen and ibuprofen as needed for fever without selection criteria for when to use each agent. Additionally, they were admitted to the Pediatric or Neonatal Intensive Care Unit at the time duplicate orders were placed. The study intervention will be an educational session for pediatric medicine residents covering the current practice of ordering antipyretics in the hospital, best practice for ordering antipyretics based on available literature, and how to appropriately order antipyretics to align with TJC and CMS medication management standards. A survey will be administered to pediatric medicine residents during the pre- and post-intervention periods to assess their knowledge and attitude toward ordering duplicate antipyretic therapy. The primary aim is to reduce the percentage of patients with both acetaminophen and ibuprofen ordered concomitantly as needed for fever without clarifying instructions between pre- and post-targeted prescriber education intervention periods.

**RESULTS:** For the pre-intervention sample, there were 319 patients of which 210 met inclusion criteria. Patients received at least one dose of both medications 74.3% of the time. We determined that only 8.6% of patients failed first line therapy and would have required a change in therapy. Acetaminophen and ibuprofen were dosed appropriately 83.8% and 90.5%, respectively. Implementation and post-intervention period are currently in progress.

**CONCLUSION:** To be reported after completion of post-intervention period

**PL XIV-7**
**THE IMPACT OF A PHARMACY-BASED TRANSITIONS OF CARE PROGRAM ON HEART FAILURE 30-DAY READMISSION RATES IN A COMMUNITY HOSPITAL.** Eman Al-Bassisi, Ernest Terry, Kisha Gant, Slidell Memorial Hospital, Slidell, LA.

**BACKGROUND:** Heart failure affects approximately 6.5 million Americans 20 of years of age and older and is projected to increase to more than 8 million people 18 years of age and older between 2012 and 2030. It costs the nation approximately $30.7 billion annually. This includes the cost of health care, medications, and loss of productivity. By 2030, this amount is expected to grow to $69.7 billion. According to the Agency for Healthcare Research and Quality, the national 30-day readmission rate for heart failure was 23.2% in 2014 making it the leading cause of hospital readmissions. Factors that contribute to early readmission rates include low rates of medication adherence, self-monitoring, and follow-up.

**PURPOSE:** The primary objective of this study is to determine the impact of a pharmacy-based transitions of care program on 30-day heart failure readmission rates.

**METHODS:** In this retrospective study, the hospital’s electronic medical record system was used to identify all patients readmitted for heart failure within 30 days. Data collected prior to the start of the transitions of care program (January 2015 to April 2016) will be used as a baseline and compared to data collected from program implementation in May 2016 through December 2018. The program initially consisted of a pharmacist assisted by pharmacy students, but it evolved to include a nurse case manager in March 2018.

**RESULTS:** Prior to program implementation, the 30-day readmission rate for heart failure in 2015 was 28.9%. There was a slight decrease in the 2016 30-day heart failure readmission rates (25.3%) following the implementation of the program in April 2016. A continuous downward trend in the 30-day heart failure readmission rates was noted in 2017 and 2018, which were 24.7% and 17.9%, respectively.

**CONCLUSION:** A pharmacy-based transitions of care program demonstrated positive outcomes on 30-day heart failure readmission rates. An addition of a nurse case manager may have continued to promote a further decrease in 30-day heart failure readmission rates. This program may serve as a potential mechanism to combat early readmissions.

**XIVB – SOLID ORGAN TRANSPLANT**

**PL XIV-8**
**INCIDENCE OF EARLY INFECTION AND OUTCOMES WITHIN THE FIRST YEAR OF ORTHOTOPIC HEART TRANSPLANT.** Carolyn Schardt, Coty Tunwar, Raymond Yau, Melissa Manson, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

**PURPOSE:** To determine the incidence of early infection and one year patient outcomes in orthotopic heart transplant (OHT) recipients.

**METHODS:** This is a retrospective, observational study evaluating OHT recipients and the incidence of early infection after transplant at a large academic medical center.
Patients were transplanted between January 1st, 2014 through October 1st, 2017. A list of all OHT recipients was obtained from the electronic health record database. Patients were included if they received an orthotopic heart transplant and excluded if they had a previous history of solid organ transplant or received simultaneous organ transplants. The primary endpoint was the incidence and type of infection within the first three months after orthotopic heart transplant. Secondary endpoints were patient outcomes at one year including recurrent infection, incidence of rejection, and overall survival.

RESULTS: Data on 111 OHT recipients was collected. The incidence of infection in the first three months after transplant was found in 51 (46%) recipients. In the 51 recipients with infection, a total of 99 infections were found with bacterial infection being the most common (45%), followed by polymicrobial (23%), viral (19%), and fungal (12%) infections. The most common organisms include cytomegalovirus (15%), Candida spp. (12%), and E. coli (7%), and the most common sites include blood (24%) and lower respiratory (21%) infections. Infection recurrence occurred in 18 of the 99 cases of infection. There was no difference in one year outcomes between recipients with and without early infection. Incidence of rejection was not statistically significantly different in recipients with early infection and no early infection (56.9% vs. 40%, p = 0.0763), and one year survival was similar between the groups (86.2% vs. 88.3%, p = 0.7447).

CONCLUSIONS: OHT recipients have a high incidence of infection early after transplant. The majority of these infections are nosocomial with bacterial as the most common type of infection. The occurrence of early infection does not appear to have an effect on survival within the first year post OHT, but there is a trend towards a higher incidence of rejection.

PL XIV-9

AT TWO WEEKS AND THE INCIDENCE OF REJECTION POST ORTHOTOPIC HEART TRANSPLANT. Jinhee Jo, Raymond Yau, Coty Tunwar, Melissa Manson, CHI St Luke’s Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: To investigate tacrolimus trough levels at two weeks post orthotopic heart transplant and its effect on rejection and mortality within one year. METHODS: This is a retrospective, observational study evaluating heart transplant patients receiving tacrolimus-based immunosuppression at Baylor St. Luke’s Medical Center. The time period of this study was between September 1, 2014 through September 1, 2017. A list of all heart transplant patients who received basiliximab induction therapy and fit the inclusion criteria was obtained from the electronic health record database. The primary endpoints were one year post transplant rejection rates as confirmed by endomyocardial biopsy and one year mortality rates. A chi-squared test was performed to assess the difference in the incidence of one year rejection and mortality in patients with therapeutic tacrolimus trough levels at two weeks post transplant compared to the ones with non-therapeutic tacrolimus trough levels. RESULTS: A total of 98 patients were initially screened, and of those, 70 patients who received basiliximab induction and tacrolimus-based immunosuppression were included. Patient characteristics include: 81% male, 51% Caucasian, mean age of 57 years [SD] ± 11.6, and 53% patients with ischemic cardiomyopathy as indication for heart transplant. Sixteen patients (23%) had four consecutive therapeutic tacrolimus trough levels at two weeks. Of those, five patients (31%) experienced biopsy proven 2R rejection within one year. Among patients without four consecutive therapeutic trough levels at two weeks, 28 patients (52%) experienced 2R rejection, corresponding to p= 0.1471. Antibody mediated rejection occurred in one patient (6%) with therapeutic tacrolimus trough levels at two weeks, and in five patients (7%) without therapeutic trough levels, corresponding to p= 0.7057. Of 16 patients who had four consecutive therapeutic trough levels, mortality occurred in two patients (13%), and of 54 patients without therapeutic trough levels, mortality occurred in six patients (11%).

CONCLUSION: Based on these findings, there was no statistically significant difference in mortality rates between patients with four consecutive tacrolimus trough levels at two weeks compared to those without. However, when comparing 2R rejection, there was a higher incidence in patients with non-therapeutic tacrolimus trough levels at two weeks post transplant. Considering the small sample size, further studies are needed to elucidate these findings.

PL XIV-10

REVIEW OF THE OUTCOMES DATA ON THE USE OF DIRECT ORAL ANTICOAGULATION IN SOLID ORGAN TRANSPLANT PATIENTS. Kayla D. Barrett, Mary Olunsemi, Sarah Wright, Venkatesh Arriyamuthu, Arjmand Mufti, UT Southwestern Medical Center, Dallas, Texas.

PURPOSE: To demonstrate that direct oral anticoagulants (DOACs) are safe alternatives to warfarin in solid organ transplant patients by examining the rates of venous thromboembolism (VTE), stroke and bleeding events in both patients taking DOACs and patients taking warfarin.

METHODS: A retrospective chart review that includes patients who have received a solid organ transplant (heart, lung, kidney, liver) in the past 10 years, are at least 18 years of age and have received either a direct oral anticoagulant or warfarin. Chart review will be used to collect data regarding demographics, type and date of organ transplant, indication and duration of anticoagulation, dosing, occurrences of stroke, VTE or major bleeding, hemoglobin and serum creatinine.

RESULTS: In progress

CONCLUSIONS: In progress

PL XIV-11

EVALUATION OF IMMUNIZATION TRACKING FOR CARDIOTHORACIC TRANSPLANT PATIENTS AT AN ACADEMIC MEDICAL CENTER. Ada Selina Jutha, Minoosh Sobhanian, Memorial Hermann-Texas Medical Center, Houston, TX.

PURPOSE: To identify barriers and pitfalls in the process of collecting immunization history for cardiothoracic (CT) transplant patients in order to implement an intervention that will improve and increase documentation.

METHODS: Using data retrospectively collected from the institution’s electronic records, we evaluated the documentation of immunization history and titers for all CT transplant patients from January 1, 2016 through June 30,
2018 receiving outpatient follow-up at the Memorial Hermann Center for Advanced Heart Failure to gather baseline data. Next, a comprehensive immunization form was created and shared with all of the transplant coordinators to facilitate and streamline the process. The immunization form lists all of the recommended vaccines based on the International Society for Heart and Lung Transplantation (ISHLT) Listing Criteria. Three weeks after introducing the form, data collection was repeated to determine if there was an improvement in documentation.

RESULTS: An interim analysis of 100 patients was performed. Eighty patients received heart transplants, 15 patients received lung transplants, and 5 patients received heart/kidney transplants. Hepatitis A, hepatitis B, and varicella titers were reported in 96-98% of patients. Based on the titers, 76 patients needed the hepatitis A vaccine, 72 patients needed the hepatitis B vaccine, and 6 patients needed the varicella vaccine. Overall, documentation of pre-transplant immunizations is as follows: 6% hepatitis A, 8% hepatitis B, 35% influenza, 56% Pneumovax®, 18% Prevnar®, and 2% varicella. In the post-transplant period, only 33% of patients had an influenza vaccine documented, 16% had the Pneumovax® vaccine documented, and 23% had the Prevnar® vaccine documented. Post-intervention data collection and analysis are currently still in progress.

CONCLUSION: Conclusions regarding the impact of the immunization form among the CT transplant population are still to be determined. The preset goal is to improve and increase documentation of immunization history by 50%.

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**PL XIV-13**

**IMPACT OF HEPATITIS C VIREMIA ON POST TRANSPLANT DIABETES MELLITUS IN LIVER TRANSPLANT RECIPENTS.** Kelsey Kleinf 1-4, Joelle Nelson 1-4, Christina Guerra 3-4, Barrett Crowther 1, Elisabeth Kincaide 3-4, Vincent Speeg 1-3, Naim Alkhouri 1-3,6,7, Reed Hall 1,4,1 University Health System, San Antonio, TX, 1 The University of Texas at Austin, College of Pharmacy, Pharmacotherapy Division, Austin, TX, 2The University of Texas Health Science Center at San Antonio, San Antonio, TX, 3University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX, 4University Transplant Center, San Antonio, TX, 5University Transplant Center, San Antonio, TX, 6Texas Liver Institute, San Antonio, TX.

**PURPOSE:** Compare incidence of post-transplant diabetes mellitus (PTDM) in hepatitis C virus (HCV) positive patients with and without viremia at the time of orthotopic liver transplant (OLT).

**METHODS:** This single-center retrospective review included adult HCV-infected OLT recipients transplanted between 1/1/2010-9/5/2017 without a pre-transplant diagnosis of diabetes. Primary outcome was PTDM incidence within 1 year of transplant, defined as at least one of the following: ≥ 2 fasting blood glucose levels (BG) of ≥ 126 mg/dL, random BG ≥ 200 mg/dL, 2-hour BG ≥ 200 mg/dL after OGTT, HgbA1c ≥ 6.5%, new diabetes diagnosis, or addition of anti-diabetic medication(s). Baseline characteristics were assessed in a univariate analysis. Variables with a p-value of ≤ 0.1 were included in a multivariate logistic regression analysis to identify independent predictors of PTDM.

**RESULTS:** Fifty-seven HCV positive OLT recipients were included, of which 53% (n=30) were actively viremic at transplant. Baseline characteristics were similar between groups, except for a lower incidence of pre-transplant hypertension and direct-acting antiviral agent use in the actively viremic group. Thirteen patients with HCV active viremia at the time of transplant developed PTDM at 1-year post transplant versus three patients without (43% vs. 11%, p=0.0086). Univariate analysis identified active viremia...
(p=0.0086), male gender (p=0.064), and higher biological MELD score (p=0.0287) for inclusion in multivariate analysis. Biological MELD score and active viremia were identified by multivariate analysis to be independently associated with PTDM (p=0.0174 and p=0.0456, respectively). Relative risk for PTDM in patients with viremia compared to those without was 3.9 (95% CI 1.3-12.2). Rates of death-censored graft loss and mortality were low overall and similar between groups.

**CONCLUSION:** OLT patients with HCV active viremia at transplant were more likely to develop PTDM at 1-year compared to those without. Viremia clearance prior to transplant may decrease risk of PTDM in liver transplant recipients. This is an additional factor to consider when deciding whether to treat patients for HCV prior to transplant.
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