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IA – AMBULATORY CARE

PL 1-I
EFFECT OF THE RENIN-ANGIOTENSIN SYSTEM INHIBITORS ON HEMOGLOBIN LEVELS IN CHRONIC KIDNEY DISEASE PATIENTS AT A VA MEDICAL CENTER. Oluchi Emelogu, Sonya Wilmer, Venkat Ramanathan, Michael E. DeBakey VA Medical Center, Houston, Texas.

BACKGROUND: Chronic kidney disease (CKD), Stages 1-5, in the U.S. adult general population was 14.8% in 2011 to 2014.1 Angiotensin converting enzyme inhibitors (ACEi) and angiotensin receptor blockers (ARB) are the mainstay of blood pressure management for patients with CKD as recommended by the Kidney Disease: Improving Global Outcomes (KDIGO) guidelines. Studies have confirmed the benefit of using ACEi/ARB therapy in patients with CKD given their renal protective mechanisms which include vasodilation and improvement of vascular endothelium function. However, there has been controversy surrounding ACEi/ARB therapy and the suppression of erythropoiesis and eventual exacerbation of anemia. Anemia is an independent risk factor for cardiovascular disease as well as mortality in CKD. ACEi and ARBs have been reported to decrease the production, as well as the action, of erythropoietin in patients undergoing dialysis and kidney transplantation. There is limited data regarding this effect on non-dialysis CKD patients. Therefore, we conducted a retrospective study to determine whether (and to what extent), renin-angiotensin inhibitors affect blood hemoglobin levels in non-dialysis CKD patients at the Michael E. DeBakey VA Medical Center. We also compared the effects of ACEi and ARBs on hemoglobin levels.

OBJECTIVE: To determine whether (and to what extent) ACEi and ARBs affect blood hemoglobin levels in non-dialysis CKD patients at the Michael E. DeBakey VA Medical Center (MEDVAMC). Also, to compare the effects of ACEi versus ARBs on hemoglobin levels in these patients.

METHODS: This study is a retrospective chart review of adults patients with CKD defined based on presence of a stable estimated glomerular filtration rate (eGFR) < 60 ml/min/1.73m² or a stable eGFR ≥ 60 ml/min/1.73m² and urine albumin excretion ≥ 30 mg and with first time prescriptions for an ACEi or an ARB in the MEDVAMC from January 1, 2016 to December 31, 2016. Electronic medical records were used to assess patient demographics, laboratory values, vitals, comorbidities and start date of ACEi/ARB prescription.

RESULTS: Data collection and analysis currently in progress.

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

PL 1-I-2
PHARMACIST IMPACT ON TYPE 2 DIABETES MANAGEMENT AT A HOMELESS CLINIC. Esther C. Okoro, Ogechi Ubanyionwu, Claire Rodrigues, Mandy Burton, JPS Health Network, Fort Worth, TX.

PURPOSE: To assess the change in hemoglobin A1C at six months post-clinical pharmacist visits in a patient-centered medical home dedicated to the homeless population.

METHODS: A single-center, retrospective cohort study was conducted in a patient-centered medical home from January 1, 2017 through July 31, 2017. Eligible patients received care at the homeless medical home, were 18 years of age or older, had type II diabetes, were referred to the clinical pharmacist by their primary care provider, had at least two office visits with the clinical pharmacist, and was being managed on at least one diabetic medication. The primary outcome was to evaluate a change in patients’ hemoglobin A1C percentage after 6 months who received disease state management with a clinical pharmacist at the homeless clinic. Change in hemoglobin A1C percentage was defined as an adjustment in baseline of patients’ average blood glucose measured on month 3 and month 6 during their follow up visits with the clinical pharmacist. Descriptive statistics and paired sample t-tests were performed to evaluate the difference in A1C over a 6 month period.

RESULTS: A total of 78 patients were screened. Of the 78 patients, 10 patients were excluded due to not meeting the inclusion criteria of having type II diabetes or attending at least two visits with the clinical pharmacist. Of the remaining 68 patients, 34 (56%) were black or African American with a mean age of 54 years. The average baseline hemoglobin A1C was 10.1% (range 5.7% - 17.2%). Patients’ diabetic medications consisted primarily of dual therapy with oral and insulin (53%) and monotherapy with oral agents (22%). Thirty-six (53%) patients had diabetic neuropathy, 24 (35%) had nephropathy, 21 (31%) had chronic kidney disease, and seven (10%) patients were identified to have diabetic retinopathy. The primary outcome of this study showed a mean difference in A1C of 0.90 ± 3.37 (p<0.097) from initial to 6 months.

CONCLUSION: Preliminary results indicate that although there is no statistical difference, in 6 months clinical pharmacists can still have a clinical impact on this vulnerable patient population’s A1C values.

PL 1-I-3
PATIENT EXPERIENCE WITH CLINICAL PHARMACIST SERVICES IN TRAVIS COUNTY FEDERALLY QUALIFIED HEALTH CENTERS. Jennifer Shin, Jamie Barner, Aida Garza, Sara Linedecker, Leticia Moczygemba, Maaya Srinivasu, CommunityCare Health Centers and University of Texas at Austin College of Pharmacy, Austin, TX.

PURPOSE: A positive patient experience with care has been linked with good health outcomes. This study seeks to examine patient experience with clinical pharmacist visits in an ambulatory care setting. The study objective is to describe patient experience with services routinely completed for every pharmacist visit, including medication reconciliation, assessment of progress toward treatment goals, medication and disease education, and follow-up instructions.
METHODS: This is a cross-sectional, multi-clinic study. Patients ≥ 18 years of age who are, English or Spanish speaking, and have completed a clinical pharmacist appointment will be included. Patients with co-visit appointments (joint physician and pharmacist visits) will be excluded. Patients will evaluate their experience with their visit through a questionnaire comprised of four domains: pharmacists’ communication skills, patients’ understanding of medications, patients’ understanding of health conditions, and patient understanding of follow-up instructions. Demographic and health-related variables will also be collected (age, gender, race, health condition(s) and perceived health status). Patients will indicate their level of agreement for each question using a 5 point Likert scale from 1=“strongly disagree” to 5=“strongly agree”. The primary outcome will be an overall score on the experience of the visit. Secondary outcomes will include patient scores on each domain. Clinical pharmacists at selected clinics will conduct each visit with offering the opportunity to participate in the survey. Results of the study will be analyzed with descriptive and inferential statistics, as well as Cronbach’s alpha for scale reliability.

RESULTS: Data will be collected and analyzed once the study duration ends. CONCLUSION: It is expected that the study findings will provide information about patients’ experience with clinical pharmacist services and whether there are opportunities for improvement.

PL 1-5
EFFECT OF STATIN COMBINATION THERAPY ON PREVENTION OF CARDIOVASCULAR DISEASE IN HIGH-RISK DIABETIC PATIENTS. Trang T Nguyen, Meredith Sigler, Courtney Duval, Lisa Chastain, Carlos Alvarez, Texas Tech University School of Pharmacy, Dallas, TX.

PURPOSE: To evaluate the cardiovascular effects of cholesterol-lowering combination therapy in patients with diabetes mellitus, triglycerides above 200mg/dL, and low HDL (< 40mg/dL in males and < 50mg/dL in females) over a 10-year follow-up period.

METHODS: This retrospective study included all veterans between the ages of 40 and 75 with a diabetes diagnosis via ICD-9 code that was prescribed statin and a second non-statin cholesterol lowering therapy between August 1, 2002 to August 1, 2005. Electronic medical records for all subjects who met the inclusion criteria were analyzed for benefit of cardiovascular disease prevention in a 10-years follow-up period. Safety of cholesterol combination therapy was also assessed.

RESULTS: To be reported.

CONCLUSIONS: To be reported.

PL 1-6
IMPACT OF REAL-TIME PRESCRIPTION BENEFIT INFORMATION AT POINT OF DISCHARGE ON A PROVIDER-SPONSORED HEALTH PLAN. Thomas Roduta, Dominic Vu, Rodney Cox, David Wallace, Susan Abughosh, Memorial Hermann Health System, University of Houston, Houston, Texas.

Purpose: Prescription medications account for nearly 10% of national healthcare expenditures ($3.4 trillion in 2016). Appropriate medication prescribing may reduce costly complications, impacting overall healthcare costs. Limited knowledge of the cost of medications coupled with the dynamic nature of prescription insurance formularies makes it difficult to ensure prescribing of cost-effective drug therapy. The objective of this study is to evaluate the impact of prescription formulary status availability using real-time adjudication at the point of discharge on patients’ ability to acquire and remain adherent to medications.

Methods: Memorial Hermann (MH) has implemented a tool that provides real-time prescription benefit information for patients with prescription insurance available in the electronic medical record (EMR). A multicenter, retrospective cohort study of all covered lives under the provider-sponsored health plan treated in a MH inpatient facility from July 1, 2016 through December 31, 2016 was performed. Patients with prescription benefits available were compared to those without to determine percentage of preferred medications prescribed and time to first/second fill. Criteria for appropriate versus delayed procurement were defined.

Results: 1,148 patients were included in the study. Majority (62%) of prescriptions prescribed regardless of benefit availability were preferred. However, non-formulary
prescribing was higher when benefits were not available (12% versus 26%, respectively; \( p = 0.05 \)). Results for patient time to first/second fill are pending.

Conclusions: Real-time prescription benefit availability does not affect prescribing behavior for tiered/preferred medications. However, the tool significantly reduced the amount of non-formulary medications prescribed. Conclusions on patient time to first/second fill are pending final data analysis.

PL I-7
LEVERAGING HEALTH SYSTEM PHARMACY OPERATIONS AND DRUG COST SAVINGS TO SUSTAIN A REMOTE CLINIC. Andrea A. White, Jeffrey Wagner, Julianna Fernandez, Linh Nguyen, Divya Varkey, Juan Carlos Bernini, Texas Children’s Hospital, Houston, TX.

PURPOSE: Vannie Cook Children’s Clinic, located in McAllen, Texas, is the region’s first pediatric hematology/oncology clinic. The mission of the clinic is to offer treatment to children along the Mexico border in South Texas who suffer from cancer and blood disorders. Currently, the clinic accrues over $5 million annually in drug procurement costs with little to no reimbursement and is challenged to continue operations. Without assistance, the clinic is at risk of not being able to continue providing care for the patients of the Rio Grande Valley. The purpose of this project is to leverage Texas Children’s Hospital pharmacy operations in providing medication to the Vannie Cook Clinic at a lower cost to ensure sustained operations.

METHODS: This was a retrospective, single-arm descriptive study that reviewed outpatient drug order invoices from March 2017 to May 2017 to assess the average monthly cost of medications, and, specifically, to determine which medications would yield the most cost savings. After identifying and targeting the first medication to be piloted given its expense and stability, a process was developed, operationalized, and implemented for the preparation and dispensing of the medication for delivery and administration to the patients of the remote clinic. After implementation of the first pilot, Vannie Cook Children’s Clinic medication order invoices from December 2017 to March 2018 will be analyzed and a comparison study will be performed, against the data from March 2017 to May 2017, to evaluate cost savings after implementation. Following the successful implementation of said process, additional medications will be included to yield additional savings.

RESULTS: To be presented.

CONCLUSION: To be presented.

PL I-8
PROCESS DEVELOPMENT FOR THE EVALUATION OF INTRAVENOUS WORKFLOW MANAGEMENT SOLUTIONS FOR A LARGE HEALTH SYSTEM. Daniel L. Rose, Sidney P. Phillips, Jason L. Trahan, Baylor Scott and White Health, Dallas, TX.

PURPOSE: The Institute for Safe Medication Practices (ISMP) targeted medication safety best practices for hospitals recommends eliminating proxy methods of verification for compounded sterile products (e.g., syringe pull back method) and implementing technology to assist in the verification process. This project will investigate the process development of evaluating workflow management systems to comply with ISMP best practices, decrease errors, and increase efficiency.

METHODS: A team of pharmacists and pharmacy technicians will evaluate workflow management solutions. The team will be comprised of representation from small to large hospitals in both regions of Baylor Scott and White Health, corporate pharmacy employees, pharmacy informatics, and a resident. Solutions currently available on the market will be considered based on the following categories: technology (e.g., user interface and electronic health record compatibility), functionality (e.g., pediatric/neonatal preparations and batch processing), training, analytics (e.g., metrics and reporting), and ease of use. Other differentiators may also be considered, such as the ability to monitor non-sterile preparations. A multi-step selection process will be used to narrow potential vendors. At the conclusion of this project, an IV workflow management solution will be selected for hospital pharmacies in the Baylor Scott and White Health system.

RESULTS: A team of pharmacists and technicians representing hospitals of various sizes within Baylor Scott & White Health was formed, including representation from oncology and pediatric pharmacy. The team created a 49-question request for information (RFI) that was submitted to six vendors of IV workflow management solutions. All six vendors provided responses to the RFI.

CONCLUSION: The team has not yet finalized a recommendation to select an IV workflow management solution. However, the process steps used in this project provide a generalizable framework for other pharmacy evaluations.

PL I-9
EFFECT OF BEST PRACTICE ALERTS ON NURSES’ INTENTIONS TO PERFORM MEDICATION EDUCATION: AN APPLICATION OF THE THEORY OF PLANNED BEHAVIOR. Pei Jen Lin.

Error! Bookmark not defined.. Alex C. Varkey, A. Carmine Colavecchia, Thani Gossai, Linda Haines, David Putney, Houston Methodist Hospital, Houston, TX; Susan Abughosh, Divya Varkey, University of Houston College of Pharmacy, Houston, TX.

PURPOSE: Inadequate education about medications can increase the risk of medication-related errors. The national average of patients who reported that staff “Always” explained about medicines before giving it to them was 65% for measurement period from 10/01/2015 to 09/30/2016. A multi-disciplinary team consisting of pharmacists, nurses, and informaticists developed an innovative solution utilizing best practice alerts (BPAs) to
facilitate medication education. The authors of this study aim to understand the motivational factors that may influence nurses’ behavioral intentions to perform medication education to patients at the bedside and determine the effect of BPAs on nurses’ intentions to perform medication education.

METHODS: This pre-post questionnaire study was conducted at a 907-bed academic medical center. The survey was developed based upon a framework called, the theory of planned behavior, to examine motivational factors that may influence nurses’ intention to perform medication education. The study sample composed of 150 nurses working on the six pre-designated pilot units for medication education BPAs. An elicitation study was arranged in focus groups to develop the questionnaire that was given to nurses before and after the implementation of the medication education BPAs. Descriptive statistics, logistic and multivariate regression analyses were used to achieve the objectives of this study.

RESULTS: 95 questionnaires were collected in the pre-BPA group and 98 questionnaires were collected in the post-BPA group. Attitude and subjective norm were significantly correlated with nurses’ intentions to perform medication education. After the implementation of medication education BPAs, there was a significant increase on the control beliefs and perceived power to perform medication education.

CONCLUSION: The theory of planned behavior was useful in understanding the motivational factors that may influence nurses to perform medication education. Interventions that address key influential factors may be helpful in driving medication education initiatives.

IIA – CRITICAL CARE

PL II-1
DESMOPRESSIN FOR THE STABILIZATION OF INTRACRANIAL HEMORRHAGE IN PATIENTS ON ANTIPLATELET THERAPY. Kyllie Ryan-Hummel, Crystal Franco-Martinez, Darrel Hughes, Colleen Barthol, University Health System, UT Health San Antonio, San Antonio, Texas, The University of Texas at Austin College of Pharmacy, Austin, Texas.

PURPOSE: Acute intracranial hemorrhage (ICH) expansion occurs in approximately 73% of patients, with significant hemorrhage growth occurring in 30-40% of patients within the first 24 hours. ICH expansion is more common in patients taking antithrombotic agents. Guidelines for reversal of antithrombotics in ICH suggest a single dose of desmopressin (DDAVP) 0.4 mcg/kg intravenously for treatment of aspirin/cyclooxygenase-1 inhibitor-associated ICH in addition to platelet transfusion in patients undergoing neurosurgical intervention. Literature to support these recommendations provides conflicting evidence. The primary objective of this study is to determine whether the administration of DDAVP is associated with stabilization of ICH size in patients receiving antiplatelet therapy.

METHODS: Single center, retrospective chart review of adult patients with spontaneous or traumatic ICH receiving antiplatelet therapy. Patients were admitted to University Hospital between January 1, 2012 and September 30, 2017. Participants were separated into two groups, DDAVP versus no-DDAVP, which were matched based on age and gender.

RESULTS: A total of 150 patients met inclusion criteria, with 75 patients in the DDAVP group and 75 in the no-DDAVP group; 57% of patients were male with a median age of 72 years [IQR 63-79] and median weight of 73.8 kg [IQR 63.5-86.1]. Traumatic injuries accounted for 69.3% of the ICHs. The median dose of DDAVP was 0.34 mcg/kg [IQR 0.29-0.39]. Hemorrhage stabilization occurred in 87% vs 70.7% of DDAVP and no-DDAVP group respectively (p=0.02). Mortality rates were higher in the DDAVP versus no-DDAVP group (14% vs 5%; p=0.0473). One patient in the DDAVP group experienced a venous thromboembolism within 24 hours of DDAVP administration.

CONCLUSION: Patients who received DDAVP had greater hemorrhage stabilization compared to those who did not receive DDAVP; however, higher mortality rates were seen in the DDAVP group compared to the no-DDAVP group. This occurrence may not be directly attributable to the DDAVP but could be multifactorial and closely related to the patient severity of illness at baseline. This study population utilized DDAVP doses lower than those currently proposed in the guidelines. The current study adds to the sparse existing literature and further highlights the need for larger, randomized, prospective clinical trials to determine the efficacy and safety of DDAVP for ICH stabilization in patients on concurrent antiplatelet therapy.

PL II-2
EVALUATION OF SEROTONIN RELEASE ASSAY (SRA) AND ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA) OPTICAL DENSITY TEST IN PATIENTS RECEIVING EXTRACORPOREAL MEMBRANE OXYGENATION (ECMO). Vivek Kataria; Leanne Moore; Sarah Harrison; Omar Hernandez; Nathan Vaughan, Baylor University Medical Center (BUMC), Dallas, TX.

Purpose: The purpose of this study is to evaluate the application of enzyme-linked immunosorbent assay (ELISA) optical density (OD) thresholds and the serotonin release assay (SRA) in patients receiving ECMO and aid clinicians in objectively ruling out HIT without sending a confirmatory SRA.

Methods: A retrospective study was conducted to evaluate patients admitted to the cardio-thoracic ICU from July 1, 2012 to August 18, 2017 who were placed on ECMO and ordered a SRA. The primary objective of this study was to assess the proportion of patients with a positive SRA following an ELISA OD threshold of: less than 0.4, 0.4-1.0, and greater than 1.0. Secondary endpoints assessed the proportion of patients switched to an alternative anticoagulant, average time until a SRA result, and the relationship between duration of ECMO and thrombocytopenia. Safety endpoints included the incidence of a venous thromboembolism (VTE), bleeding events, initial dosing of the alternative anticoagulant, and time within therapeutic range. Outcome data was also collected such as mortality and disposition. Descriptive statistics were used to analyze all data points, as there was no comparative group. P-values less than 0.05 were considered statistically significant.

Results: A total of 49 patients were included in this study. Participants that met inclusion criteria were predominately males (61%) with a mean age of 54 years. Sixty-seven
percent of patients received VA ECMO, with the most common indications being cardiogenic and post-operative shock. Average duration of ECMO was 10.7 days, with an ICU length of stay of 26 days. CRRT was concomitantly used in 63% of patients for an average of 7.8 days. Furthermore, platelet counts were dramatically reduced from baseline, with a platelet decrease of 79.5%. All patients except two patients had an ELISA OD test performed at the first clinical suspicion of HIT; followed by a confirmatory SRA. 57% had an OD score less than 0.4, 19% between 0.4-1.0 and 23% greater than 1.0. Of the 9 patients identified with a positive SRA, 7 had an OD score > 1.0. The remaining 38 patients had a negative SRA, with only 4 patients having an OD score > 1.0. Alternative anticoagulation, predominantly argatroban, was initiated in 61% of patients, with 73% of these patients being identified as HIT negative. In all patients, the average duration of alternative anticoagulation was 4.1 and 2.1 days, respectively.

**Conclusion:** This study demonstrated that a profound drop in platelet count can be anticipated in patients on ECMO. Furthermore, the preliminary data suggests that an OD greater than 1.0 improves the likelihood of a positive HIT result. This assessment has the potential to identify if OD thresholds for patients undergoing ECMO can accurately be applied. A more detailed analysis of the results will be performed following a comprehensive statistical analysis.

**PL II-3**

**ASSESSMENT OF THE EFFECTIVENESS OF UTILIZING P2Y12 ASSAYS TO INDIVIDUALIZE ANTIPLATELET THERAPY IN STROKE PATIENTS.** Sharon Thomas, Jennifer Belisle, Methodist Dallas Medical Center, Dallas, Texas.

**PURPOSE:** To compare hospital readmission rates for recurrent stroke in patients in whom P2Y12 assays were used and were not used.

**METHODS:** A retrospective chart review was conducted in patients with principal diagnoses of cerebral infarction or occlusion of cerebral arteries at Methodist Dallas Medical Center from January 2015 to August 2017 based on ICD 9 and 10 codes. Patients were included if they were on aspirin therapy prior to admission and were initiated on clopidogrel therapy during hospitalization.

**RESULTS:** A total of 724 patient charts were reviewed, of which 72 patients met inclusion and exclusion criteria. Among the 11 patients tested with the P2Y12 assay, 55% had high on-treatment platelet reactivity (PRU>208). Five (8%) patients had a recurrent stroke in the group that was not assayed compared to one (9%) patient in the group that was assayed. Additionally, there were no 90-day readmissions for bleed among patients who were assayed compared to two (3%) patients in the group that was not assayed. More patients in the group that was not assayed had all-cause 90-day readmissions compared to patients in the group that was assayed (30% vs 18%).

**CONCLUSION:** The impact of P2Y12 assays on stroke readmission remains unclear at this time, especially in light of variable timing of assay sample collection. Further studies need to be conducted to delineate utility of the P2Y12 assay in stroke patients and appropriate changes in pharmacotherapy based on its results.

**PL II-4**

**EFFECT OF DEXMEDETOMIDINE VERSUS MIDAZOLAM IN SEPTIC INTENSIVE CARE UNIT PATIENTS.** Olivia Antosz, Kristen Hillebrand, Tamara Reiter, Methodist Dallas Medical System, Dallas, TX.

**PURPOSE:** To determine if dexmedetomidine has improved patient outcomes compared to midazolam in septic intensive care unit (ICU) patients.

**METHODS:** Retrospective chart review utilizing MediTech for patients admitted from March 2015 to March 2017 with a primary diagnosis of sepsis, severe sepsis, or septic shock (ICD-10 code A41.9), requiring the use of either dexmedetomidine or midazolam for sedation.

**RESULTS:** 28 patients met inclusion criteria (13 received dexmedetomidine and 15 received midazolam). The median duration of mechanical ventilation for dexmedetomidine was 42.3 hours compared to 41.7 hours with midazolam (p=0.139). Duration of sedation (16.8 vs. 21.0 hours, p=0.486) and ICU length of stay (3.9 vs. 4.7 days, p=0.2), for dexmedetomidine compared to midazolam, were similar between groups. There was a trend toward longer time to extubation once sedation was held in the midazolam group (10.9 vs. 27.1 hours, p=0.103). The average duration of norepinephrine, vasopressin, and phenylephrine in the dexmedetomidine group compared to midazolam were 14.2 vs. 11.6 hours (p=0.683), 12.4 vs. 1.6 hours (p=0.323), and 0.4 vs. 1.2 hours (p=1.00), respectively. Patients receiving either dexmedetomidine or midazolam experienced similar rates of delirium (23.1 vs. 13.3%, p=0.628) and bradycardia (46.1 vs. 13.3%, p=0.087). The median cost per patient for dexmedetomidine was $81.12 compared to $44.33 with midazolam.

**CONCLUSION:** Dexmedetomidine and midazolam have similar patient outcomes in septic ICU patients, with dexmedetomidine being associated with a higher cost.

**PL II-5 - OPEN**

**IIB – MEDICATION-USE SAFETY, PHARMACY SYSTEMS & OPERATIONS**

**PL II-6**

**EVALUATING THE IMPACT OF A SYSTEMATIC APPROACH TO OPTIMIZING MEDICATION ALERTS IN A HEALTH-SYSTEM.** Sunny B. Bhakta, A. Carmine Colavecchia, Linda Haines, Divya Varkey, Kevin Garey, Houston Methodist Hospital, Houston, TX.

**BACKGROUND:** Limited literature evaluates a sustainable process for optimization of medication alerts when implementing a new EHR technology with clinical decision support (CDS) capabilities. This study aimed to provide health-system enterprises with a systematic approach to optimizing medication alerts with new EHR technology and evaluate the effect of systematic interventions to improve the meaningful use of medication related clinical decision support system.

**METHODS:** An 81 week quasi-experimental study was conducted to evaluate the impact of interventions made to medication related CDS alerts by a multi-disciplinary committee. The primary endpoint was weekly provider
acknowledgement rates of medication alerts after drug-drug interaction recategorization. Secondary endpoints included weekly provider modification rates in response to drug alerts, monthly number of alerts per 100 medication orders, and subgroup analysis of various types of medication alerts on a weekly basis. Data on alert and warning frequency, severity, and response type were analyzed before and after committee interventions to determine the impact of committee-led interventions. Interrupted time series regression analysis was utilized to assess primary and secondary endpoints over the study time period.

RESULTS: After drug-drug interaction recategorization, weekly provider modification and acknowledgement rates significantly increased (2.02 ± 0.17%, p<0.001; 1.48 ± 0.25%, p<0.001, respectively). Total alerts per 100 medication orders significantly decreased after drug-drug interaction recategorization (Pre-intervention median: 88.4 vs Post-intervention 63.1, p=0.017).

CONCLUSION: Committee-led interventions to drug-drug interactions facilitated an increase in both medication alert acknowledgement and modification rates as well as an overall reduction in the total quantity of generated alerts.

PL II-7

EFFECTIVE DIABETES MANAGEMENT IN HEART TRANSPLANTATION. Stefany Nguyen, Elaine Chow, Memorial Hermann-Texas Medical Center, Houston, TX.

PURPOSE: To identify barriers to referrals in the pre- and post-heart transplant population and to increase the number of referrals to the Memorial Hermann-Texas Medical Center Medication Therapy and Wellness Clinic (MTWC) for diabetes management. The pharmacist-run diabetes management services provided by the MTWC had previously been offered to post-transplant patients in the abdominal and cardiothoracic transplant population.

METHODS: Using data retrospectively collected from the institution’s electronic records, we evaluated current success rates of the MTWC diabetes management services in the post-abdominal transplant population within the 2017 fiscal year as a basis for preliminary intervention. After evaluation of feedback and results from the preliminary intervention, further data collection was performed to identify appropriate post-heart transplant patients for recruitment from the beginning of the transplant program through November 2017. Additionally, further data was evaluated to identify pre-heart transplant patients with or without left ventricular assist device (LVAD) as bridge to transplantation (BTT), unlisted or listed as United Network for Organ Sharing (UNOS) status 1B, 2, 7, with no particular timeframe restriction. Patients targeted for recruitment were identified as those with uncontrolled diabetes defined as hemoglobin A1c (HgbA1c) ≥7%, with greater emphasis on HgbA1c ≥8% as these patients are either unable to qualify for transplant (pre-transplant) or not considered to meet the 2018 Healthcare Effectiveness Data and Information Set (HEDIS) measure for diabetes control (post-transplant).

RESULTS: Baseline data revealed that within the past fiscal year, 160 abdominal transplants were performed with 57 (37%) referred to the MTWC, and 17 heart transplants were performed with 0 (0%) referred to the MTWC. Within 3 months of referral, 61% of patients achieved HgbA1c <8% and 65% achieved HgbA1c <7%. Within 6 months of referral, 82% achieved HgbA1c <8% and 53% achieved HgbA1c <7%. Further evaluation of 133 patients in the evaluable pre-transplant population yielded 18 (14%) with uncontrolled diabetes. Evaluation of 173 patients in the post-transplant population yielded 37 (21%) with uncontrolled diabetes—24 (65%) with HgbA1c ≥7.9% and 13 (35%) with HgbA1c ≥8%. Of the patients with uncontrolled diabetes, 20 (54%) had established endocrinologist-directed diabetes management, 12 (32%) did not, and 5 (14%) were unable to be determined.

CONCLUSION: Proper management of diabetes to control disease progression and severity are important to prolong the benefits of heart transplantation while reducing complications and potentially mortality. Data analysis and evaluation of process improvement strategies are currently ongoing. Identification of pre-transplant patients necessitating diabetes management in order to achieve HbA1c < 8% is necessary for transplant qualification. Equally as important is the identification of post-transplant patients who may develop worsening pre-existing diabetes or post-transplant diabetes secondary to hyperglycemic effects of chronic immunosuppressive regimens. The establishment of pharmacist-run diabetes management services for patients in the transplant population serves as an additional referral destination for pre-and post-heart transplant patients requiring hyperglycemia management.
PL II-9
APPROPRIATE DIAGNOSTIC EVALUATION AND DOCUMENTATION OF HEPARIN-INDUCED THROMBOCYTOPENIA IN ADULT PATIENTS.
Thomas W. Szymanski, Latosha D. Mitchell, Memorial Hermann – Texas Medical Center. Houston, TX.

PURPOSE: To assess the diagnostic evaluation approach and documentation of heparin allergy in patients with laboratory findings consistent with heparin-induced thrombocytopenia (HIT). Patients with inappropriately documented heparin allergies, including an active allergy despite a negative serotonin release assay (SRA), may be exposed to more alternative anticoagulants in subsequent admissions.

METHODS: Using data retrospectively collected from Memorial Hermann – Texas Medical Center’s electronic records, we established a baseline on the median time to documentation of heparin allergy after a positive SRA, number of patients with a negative SRA with a heparin allergy, and percent of patients with a positive ELISA test with an SRA subsequently ordered. The project implemented consists of real-time monitoring of ELISA test results to ensure timely documentation of heparin allergies and the appropriate ordering of SRAs. The clinical surveillance system at our institution, Theradoc, was used to electronically notify the lead investigator when ELISA tests were resulted. If interventions were required, the clinical pharmacist assigned to the patient service was contacted to discuss interventions.

RESULTS: An interim analysis of the 95 patients who had an ELISA test resulted after implementing the ELISA test monitoring program was performed. There were 6 patients who had a negative SRA but an active heparin allergy before the pilot implementation versus 0 patients after. Prior to implementation of this pilot, only 80% of patients analyzed from baseline data with a positive ELISA test had an SRA subsequently ordered, compared to 100% of patients afterwards. The median time to documentation of the heparin allergy was 21 hours prior to pilot implementation versus 0 hours post-implementation. In addition, only 23% of all patients had an ELISA test with reflex SRA ordered during the post-implementation period.

CONCLUSION: Real-time monitoring of ELISA test results by a pharmacy resident appears to result in timely documentation of heparin allergies and may result in more patients with a positive ELISA test with subsequent SRA testing. Conclusion regarding the impact of a pharmacy resident’s intervention is pending.

III A – INFECTIOUS DISEASES/HIV

PL III-1
OUTCOMES OF NON-AMPICILLIN THERAPY IN ENTEROCOCCAL INFECTIONS: A RETROSPECTIVE CHART REVIEW IN A COMMUNITY HOSPITAL. Bo Xin A. Xu, Nancy N. Vuong, Memorial Hermann Memorial City Medical Center, Houston, TX.

Purpose: The drug of choice to treat enterococcal infections is typically ampicillin. However, patients are usually treated with broad spectrum antibiotics such as carbapenems or piperacillin-tazobactam for the duration of therapy. Current laboratory methods do not report susceptibilities for carbapenems or piperacillin-tazobactam. This has made us question the appropriateness of continuing empiric treatment as targeted therapy. The objective of this study is to assess the appropriateness of non-ampicillin based therapies for enterococcal infections.

Methods: This is a retrospective chart review. Patients were included in the study if they had an enterococcal bacteremia, pneumonia, urinary tract infection, or any combination of the previously listed infections from January 2014 through December 2015. Patients were excluded if they were less than 18 years of age, pregnant/lactating women, had an intraabdominal infections without bacteremia, or had a positive urine cultures taken from a Foley catheter. The following was collected: patient demographics, microbiological data (identified organism, culture and susceptibilities), documented diagnosis for infection/type of infection, antimicrobials received, antimicrobial treatment duration, length of stay, mortality, and all associated lab values (complete blood count with differential, electrolytes, serum creatinine). Patients on ampicillin-based therapies were compared to non-ampicillin based therapies. The primary outcomes are clinical cure and microbiological cure. Clinical cure was defined as resolution of signs and symptoms of infection. Microbiological cure was defined as a repeat culture having no bacterial growth.

Results: In progress

Conclusion: In progress

PL III-2
EVALUATION OF ANTIBIOTIC DURATION IN AN EMERGENCY DEPARTMENT PRIOR TO AND POST-IMPLEMENTATION OF A FORMAL AUDIT-AND-FEEDBACK PROGRAM. Adaku Onwubuya, Chris Tawwater, Jennifer Tawwater, Megan Geurds. Texas Tech University Health Sciences Center School of Pharmacy; Abilene, TX.

BACKGROUND: Duration and increased exposure to antibiotics increase the risk of adverse events. However, antimicrobial stewardship programs (ASPs) help combat adverse outcomes associated with antibiotic use. Since the emergency department (ED) serves as a transitional area between inpatient and outpatient setting, the ED is an ideal location to target and manage antibiotic prescribing patterns. Several studies have assessed the role of a pharmacist in the ED; however, the utility of ASPs without a dedicated ED-pharmacist is uncertain. Although the results of several studies demonstrate the pharmacist’s ability to facilitate de-
escalation of therapy, appropriate duration of antimicrobial therapy is still a major concern. Furthermore, most studies that assess duration of antimicrobial therapy before and after pharmacy intervention were not performed in an emergency department setting. The purpose of this study is to determine if a pharmacist’s involvement in an antimicrobial stewardship program in the ED improves adherence to guideline-recommended antibiotic duration.

**METHODS:** This pre-intervention and post-intervention study includes patients discharged to an outpatient setting from the ED with antibiotics for community-acquired pneumonia (CAP), acute exacerbation of chronic obstructive pulmonary disease (AECOPD), urinary tract infection (UTI), or skin or soft tissue infection (SSTI). Intervention includes educating providers and bi-weekly audit with feedback. The primary outcome is adherence to guideline-based treatment durations. Secondary outcomes include mean antibiotic duration, appropriateness of antimicrobial therapy, and 30-day ED revisit and hospital readmission rates. Recommendations for antibiotic duration were based on current Infectious Diseases Society of America (IDSA) and Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines.

**RESULTS:** Study is in progress, but preliminary results are presented. There were 4 phases in this study (pre-intervention, phase 1, phase 2, and phase 3). 205 patients were included in the pre-intervention, and a total of 205 patients in the post-intervention phase of this study. Of those, 52% had UTIs, 30% had SSTI, 10% had CAP, and 8% had AECOPD. Adherence to guideline-based treatment durations in the

**PL III-3**
**IMPACT OF A PHARMACIST DRIVEN PROTOCOL AUTOMATICALLY SUBSTITUTING NAFCILLIN TO CEFAZOLIN IN METHICILLIN-SENSITIVE STAPHYLOCOCCUS AUREUS INFECTIONS.** Natalie Martinez, Andrew Faust, Terri Smith, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

**PURPOSE:** To evaluate the impact and cost-effectiveness of a pharmacist driven automatic substitution protocol of nafcillin to cefazolin in methicillin-sensitive Staphylococcus aureus (MSSA) infections.

**METHODS:** This is a retrospective analysis of patients started on either nafcillin or cefazolin for MSSA infections. In October 2017, the Pharmacy & Therapeutics committee approved an automatic substitution of nafcillin to cefazolin for most indications. Prior to this intervention, patients received either nafcillin or cefazolin for MSSA infections at the discretion of the provider. After the intervention, patients who were started on nafcillin were evaluated by pharmacists using the approved algorithm and changed to cefazolin whenever able. The nafcillin group patients were selected from January 1, 2017 to December 31, 2017 and the cefazolin group patients were selected from October 31, 2017 to December 31, 2017. Patients were included if they were initiated on either nafcillin or cefazolin as definitive therapy and had at least 1 positive culture for MSSA. Exclusion to study participation included patients that were less than 18 years of age, nafcillin or cefazolin use for less than 48 hours, or use of additional antibiotics for concurrent infections. The primary endpoint assessed was cost of therapy with secondary endpoints including duration of therapy, length of stay, days to clinic improvement, treatment interruption due to an adverse drug event, and mortality.

**RESULTS:** After screening 105 patients, 35 patients met inclusion criteria (19 in nafcillin group and 16 in the cefazolin group). Baseline characteristics were similar between the two groups. Significantly more patients had bacteremia and endocarditis in the nafcillin group compared to the cefazolin group. Implementation of the cefazolin automatic substitution protocol resulted in an annualized cost avoidance in the range of $9,431.48 to $21,993.96. The nafcillin group had a significantly longer duration of therapy (14.2 days vs. 6 days; \( p = 0.007 \)) as well as length of stay (19.6 days vs. 12.3 days; \( p = 0.0129 \)). There were no significant differences between the nafcillin and cefazolin groups regarding days to clinical improvement (6.89 vs. 5.75; \( p = 0.598 \)) or hospital mortality (5.3% vs. 0%; \( p = 1.0 \)). There were significantly more patients in the nafcillin group that had treatment interrupted due to an adverse drug event (26.3% vs. 0%; \( p = 0.0493 \)).

**CONCLUSIONS:** Based on this retrospective analysis, implementation of an automatic substitution protocol driven by pharmacist reduced costs without adversely effecting patient outcomes.

**PL III-4**
**EFFECTS OF PHARMACIST-DRIVEN MOLECULAR DIAGNOSTIC ALERTS ON CLINICAL OUTCOMES.** Benjamin A. Dagraedt, Charles F. Seifert, Texas Tech University Health Science Center, School of Pharmacy, Lubbock TX.

**PURPOSE:** To determine the effects pharmacist interpretation of molecular diagnostic results on the following: time between order queue alerts for pharmacists on the results of microbial molecular diagnostic tests and the time for a patient to receive the first dose of appropriate antibiotic if a change in therapy is warranted, total hospital and ICU length of stay, and in-hospital mortality.

**METHODS:** A retrospective chart review was conducted from the institutions electronic health records on adult patients with a documented Verigen Sepsis PCR molecular diagnostic result. Patients were stratified into the pre-pharmacist order queue alert and post implementation phase. We compared these two cohorts to assess if any difference existed for total hospital length of stay, ICU length of stay, and in-hospital mortality.

**RESULTS:** Results pending completion and will be provided at the meeting.

**CONCLUSION:** Results pending completion and will be provided at the meeting.
IIIB – INFECTIOUS DISEASES/HIV

PL III-6
ASSESSMENT OF SAFETY AND EFFICACY POST SWITCH TO NEWER GENERATION HIV ANTIRETROVIRALS. Tim Burns, Marcus Kouma, Tomasz Jodlowski, James Cutrell, Texas Tech University School of Pharmacy, Dallas, Texas.

PURPOSE: To assess the safety and effectiveness following a change to newer antiretroviral regimens containing either dolutegravir or tenofovir alafenamide in stably suppressed HIV-infected patients from the North Texas Veterans Affairs Health System.

METHODS: Retrospective chart review of stably suppressed HIV-infected patients throughout 2013-2017 who switched to a regimen containing dolutegravir or tenofovir alafenamide. Primary outcome studied the number of discontinuations by weeks 24 and 48. Secondary outcomes include average number of tablets per day, number and type of adverse events, and changes in renal/lipid profiles.

RESULTS: An interim analysis of 150 patients was performed. 4 patients had discontinued the new regimen within 24 weeks and 6 total by the end of 48 weeks. No patients experienced a loss of virologic suppression and the average CD4 increased by 64 cells/mm³. No changes were noticed in overall lipid or renal profiles. Regimens utilized prior to switching contained a combination of 2 NRTIs, NNRTIs, PI, INSTI 97%, 44%, 36%, and 36%. Average tablets required per day decreased from 2.4 to 1.6. Renal issues, dosing convenience, and side effects were the most reported reason for switching therapies. Adverse events were reported in 63% of all patients. In the groups containing dolutegravir and tenofovir alafenamide adverse events were recorded for 57% and 66% of patients. Most commonly reported adverse events were diarrhea, nausea, fatigue, and cough. There were no grade 3 or 4 adverse effects and only 1 patient discontinued therapy related to adverse effects.

CONCLUSIONS: Switching regimens in stably suppressed patients to newer antiretrovirals appears well tolerated and equally efficacious in clinical practice. Additional study is needed to determine if long term benefits will be seen related to safety profiles.

PL III-7
EVALUATING INCIDENCE, SEVERITY, AND RISK FACTORS OF RECURRENT CLOSTRIDIODES DIFFICILE INFECTION AT MDMC. Natalie Weltman, Matthew Crotty, Edward Dominguez, Methodist Dallas Medical Center, Dallas, TX.

PURPOSE: To evaluate incidence, severity, and risk factors of recurrent Clostridiodes difficile infection (CDI) at Methodist Dallas Medical Center and to evaluate the effect of appropriate treatment on patient outcomes.

METHODS: In this retrospective observational study, 286 patients tested positive for CDI between April 1, 2015 and April 1, 2017. Analysis was based on pre-specified patient characteristics that have been identified in previous clinical trials as risk factors for recurrent CDI. A logistic regression model will be implemented to determine independent factors associated with CDI at MDMC and the variables significantly associated will be determined using a stepwise approach. Additionally, appropriate antibiotic selection and duration will be evaluated based on treatment guidelines published by IDSA in 2010 and in accordance with the clinical pathway outlined at MDMC.

RESULTS: Recurrent CDI occurred in 36 of 286 patients (12%) and new infections were noted in 12 of 286 patients (4%). Logistic regression model results are pending.

CONCLUSION: Using a prediction model for recurrence may be useful in guiding treatment decisions.

PL III-8
SAFETY AND EFFICACY OF THE CONCOMITANT USE OF DIRECT ORAL ANTICOAGULANTS (DOACs) WITH POTENTIALLY INTERACTING ANTIRETROVIRALS AND DIRECT-ACTING ANTIVIRALS. Parisa Khan, Marcus Kouma, Tomasz Jodlowski, James Cutrell, Veterans Affairs North Texas Health Care System, Dallas, TX.

PURPOSE: To compare the safety and efficacy of direct oral anticoagulants vs. warfarin when used concomitantly with potentially acting antiretrovirals and direct-acting antivirals.

METHODS: Data was retrospectively collected from the institution’s electronic medical record for all patients receiving a non-nucleoside reverse transcriptase inhibitor, protease inhibitor, or NS4A polymerase inhibitor and one of the following anticoagulants: edoxaban, rivaroxaban, apixaban, dabigatran, or warfarin. Data was collected for eligible patients between October 2010 and August 2017. The primary efficacy outcome was defined as rate of thrombotic event per 1000 patient-days and primary safety outcome was defined as major bleeding event per 1000 patient-days. Secondary outcomes included rate of major and non-major bleeding, hospitalizations secondary to bleeding or thrombotic event, and rate of death secondary to bleeding or thrombotic event.

RESULTS: Sixty-six patients were included in the study (17 patients in the DOAC arm and 49 patients in the warfarin arm). The DOAC group included 4 patients on antiretrovirals and 13 patients on direct-acting antivirals. The warfarin group included 28 patients on antiretrovirals and 19 patients on direct-acting antivirals. Eighty-six percent of patients were followed by anticoagulation services during the study period. Therapeutic INRs were achieved at 37.5% of total warfarin monitoring visits. None of the patients in the DOAC arm experienced the primary efficacy endpoint. The primary efficacy endpoint occurred in 2 patients in the warfarin group. The primary safety endpoint occurred at a rate of 0.22 per 1,000 patient-days in the DOAC group vs. 0.19 per 1,000 patient-days in the warfarin group (p=0.89). The rate of major and non-major bleeding events combined was 0.22 per 1,000 patient-days and 0.38 per 1,000 patient-days for the DOAC and warfarin groups respectively (p=0.69). Hospitalization secondary to bleeding or thrombotic event occurred at a rate of 0.22 per 1,000 patient-days in the DOAC group vs. 0.47 per 1,000 patient-days in the warfarin group (p=0.53). There were no patients in either group who had documented death secondary to a thrombotic or bleeding event.

CONCLUSIONS: There were no occurrences of the primary efficacy endpoint in the DOAC group. The rate of hospitalization secondary to thrombotic or bleeding event within 30 days was greater in the warfarin group. Given the
lack of ability to maintain therapeutic INRs and greater incidence of bleeding events in the warfarin group, larger studies are warranted to explore the role of DOACs in the setting of potential drug interactions.

PL III-9 - OPEN

IVA – INTERNAL MEDICINE / PHARMACOTHERAPY

PL IV-1
IMPACT OF EDUCATIONAL INTERVENTION ON ENOXAPARIN THROMBOPROPHYLAXIS DOsing IN MORBIDLY OBESE PATIENTS IN A COMPREHENSIVE CANCER CENTER. Chelsea Wong, Tami N. Johnson, Claire A. Marten, University of Texas MD Anderson Cancer Center, Houston, TX.

PURPOSE: To describe the change in appropriate enoxaparin thromboprophylaxis dosing in morbidly obese patients [body mass index (BMI) greater than or equal to 40 kg/m²] pre- and post-educational intervention.

METHODS: A retrospective chart review was performed to include patients with a BMI greater than or equal to 40 kg/m² who received enoxaparin thromboprophylaxis from March 2016 to August 2017. Appropriate enoxaparin doses were defined as 40 mg subcutaneous (subcut) every 12 hours or 0.5 mg/kg/day for creatinine clearance (CrCl) greater than or equal to 30 ml/min, and 30 mg or 40 mg subcut daily for CrCl less than 30 ml/min within 48 hours. Educational efforts focused on three services with the most patients who fulfilled the inclusion criteria. Verbal and written education on the order set update was provided to healthcare providers. A subsequent review of data from November 2017 to February 2018 was completed to assess the impact of educational intervention.

RESULTS: The pre-implementation group included 267 patients; gynecology oncology (111), lymphoma/myeloma (78), and urology (78). The number of appropriate doses were 20 (18%), 0 (0%), and 2 (2.6%), respectively. After educational intervention, appropriate doses for the post-intervention groups were gynecology oncology 27 (71.1%), lymphoma/myeloma 5 (26.3%), and urology 5 (29.4%).

CONCLUSION: After educational intervention, we found an increase in appropriate enoxaparin thromboprophylaxis doses in all three services. Through education, pharmacists can make a considerable impact to ensure that morbidly obese patients receive appropriate enoxaparin thromboprophylaxis doses.

PL IV-2
FACTORS INFLUENCING PROVIDER AND PATIENT CHOICE OF P2Y12 INHIBITOR THERAPY. Rebekah M. Benitez, Kathleen A. Lusk, S. Hinan Ahmed, Stephanie Hartzell, Bethany A. Kalich, University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX.

PURPOSE: Clopidogrel is the most commonly prescribed P2Y12 inhibitor for acute coronary syndromes (ACS) or coronary stent placement, though ticagrelor or prasugrel may be preferred in certain clinical situations. Various factors including patient-specific factors and medication attributes may influence selection of therapy. The purpose of this study is to determine which factors are most influential to cardiology providers and patients when selecting a P2Y12 inhibitor.

METHODS: Two-part survey study of cardiology-providers and patients affiliated with a single academic medical center. Surveys differed in composition to meet the needs of their respective populations. Cardiology-provider surveys were distributed to all cardiologists and fellows within the division of cardiology. Patient surveys were mailed to all patients prescribed a P2Y12 inhibitor within the past year for ACS or coronary stent placement.

RESULTS: Data collected from 32 cardiology-provider surveys and 105 patient surveys were included in the analysis. Cardiology-providers and patients both ranked mortality reduction as the most influential factor in P2Y12 inhibitor selection. Significant differences between cardiology-providers and patients were found for 5 of the 8 factors assessed, including, risk of adverse effects, risk of drug interactions, risk of bleeding, once daily administration, and cost. Cardiology-providers ranked once daily administration, risk of bleeding, and cost as more important in guiding selection compared to patients (p < 0.001, p = 0.003, p < 0.001, respectively). Patients ranked risk of adverse effects and risk of drug interactions as more important in guiding selection compared to cardiology-providers (p = 0.005, p < 0.001, respectively). Cardiology-providers estimated prescribing ticagrelor 42.3% of the time for ACS, though 78.1% ranked it as their preferred agent. Based on a hypothetical description of P2Y12 inhibitor attributes, 55.7% of patients selected ticagrelor as their preferred agent, though only 9.3% were actually prescribed ticagrelor. A shared decision making (SDM) process was participated in by 21.6% of patients and 88.5% of patients were unaware that P2Y12 inhibitors, other than their prescribed agent, existed.

CONCLUSION: Significant differences exist between cardiology providers and patients regarding which factors influence selection of P2Y12 inhibitor therapy, specifically for safety-related factors, once daily administration, and cost. Most patients were unaware that P2Y12 inhibitors existed, and did not participate in SDM.
PL IV-3

USE OF DIRECT-ACTING ORAL ANTICOAGULANTS FOR LEFT VENTRICULAR THROMBUS. Stephanie Elagizi, Laura Fuller, Kristina Dupre, Ochsner Medical Center, New Orleans, LA.

PURPOSE: The development of left ventricular (LV) thrombus is one of the most concerning complications after myocardial infarction. Anticoagulation with warfarin has become the mainstay of treatment, however the quality of data to support the use of warfarin is limited to observational studies conducted in the pre-thrombolytic era. Direct-acting oral anticoagulants (DOACs) are gaining ground for the treatment and prevention of deep venous thrombosis, pulmonary embolism, and in non-valvular atrial fibrillation over warfarin in patients who meet appropriate criteria for their use. With the paucity of high quality studies evaluating the use of DOACs for the treatment LV thrombus, warfarin continues to be the standard of care. The purpose of this study is to compare DOACs to warfarin for the treatment of LV thrombus.

METHODS: This single-center, retrospective cohort, pilot study included patients ≥18 years with ECHO confirmed LV thrombus due to myocardial infarction, heart failure or cardiomyopathy. Patients were stratified into two comparator groups based on treatment with warfarin or a DOAC. The primary outcome was ECHO confirmed resolution of LV thrombus. Secondary outcomes included time to LV thrombus resolution, thrombotic events and major bleeding.

RESULTS: In progress.

CONCLUSION: To be presented.

PL IV-4

RELATIONSHIP OF MAJOR BLEEDING AND INTERACTION BETWEEN DIRECT ORAL ANTICOAGULANTS AND MAJOR CYP3A4 OR P-GP INHIBITORS: RETROSPECTIVE CHART REVIEW. Sana Qureshi, Cecilia Barth, Sebastian Perez, Charlotte Farris, Delaney Ivy, Scott & White Medical Center, Temple, TX.

PURPOSE: Direct oral anticoagulants (DOACs) like dabigatran etexilate, rivaroxaban, apixaban and edoxaban are newer agents for anticoagulation in non-valvular atrial fibrillation and venous thromboembolism with similar efficacy and safety profiles to warfarin. While they demonstrate pharmacokinetic benefits, patients are not routinely monitored for changes in medications putting them at higher risk of exposure to drug-drug interactions. Whether or not these interactions are clinically significant may be worth investigating. The purpose of this study is to identify patients taking DOACs who are admitted to the hospital with major bleeding and identify and quantify drug-drug interactions with strong CYP3A4 and P-gp inhibitors.

METHODS: This study entails a retrospective chart review on patients admitted for a major bleed between February 1st 2014 to June 30th 2017. Inclusion criteria comprises patients aged 18 years or older with admission for major bleed with an outpatient order for edoxaban, apixaban, rivaroxaban or dabigatran within a year of admission. These patients also require a concomitant outpatient order for a strong CYP3A4 or P-gp inhibitor as defined by the Food and Drug Administration. Primary endpoints include number of major bleeds and drug-drug interactions. Secondary endpoints include categorizing types of medications involved and bleeding site. All data will be maintained confidentially according to Scott & White Medical Center - Temple protocol for private health information.

RESULTS: Based on preliminary data with a sample size of 43 patients presenting with a major bleed, the most common DOAC and interacting medication prescribed to the patients so far in this study are rivaroxaban and amiodarone, respectively. Majority of patients presented with gastrointestinal bleeding. Other data collection is ongoing and will be presented.

CONCLUSION: Based on preliminary data, majority of patients at Scott & White Medical Center who present with major bleeding on a DOAC have a drug-drug interaction with amiodarone.

PL IV-5

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

PURPOSE: The aim of this study was to evaluate the effect of non-selective beta-blocker (NSBB) use on mortality in patients with end-stage cirrhosis.

METHODS: We performed a dual-center, retrospective cohort study of patients who received intravenous octreotide for an acute variceal bleed between July 2006 to January 2017. Patients ≥18 years of age who met criteria for end-stage cirrhosis were included. Patients were stratified into two groups based on whether or not a NSBB was prescribed at hospital discharge. The primary outcome was mortality at 24 months. A nominal logistic regression model was used to determine independent predictors of 24-month mortality.

RESULTS: A total of 255 patients met inclusion criteria. Most patients received a NSBB at discharge (88.2% vs. 11.8%). Baseline characteristics were similar among groups; however, patients who did not receive a NSBB were more likely to have a higher Model for End-Stage Liver Disease-Sodium (MELD-Na) score (p=0.03), require renal replacement therapy (p<0.01), and have hepatic encephalopathy (p=0.02). The median dose of propranolol was 20 mg (20-40 mg) and the median dose of nadolol was 30 mg (20-100 mg). In the total population, 24-month mortality was 32.8%. The NSBB group and no-NSBB group had a similar mortality rate at 24-months (32.0% vs. 38.5%, p=0.51). There were no statistically significant differences in mortality at 3-months (11.6% vs. 23.3%, p=0.08) or 12-months (22.2% vs. 30.0%, p=0.36). There were no statistically significant differences in rate of variceal bleeding (22.7% vs. 13.3%, p=0.34) or cirrhosis-related cause of death (20.4% vs. 23.3%, p=0.81). During follow-up, NSBBs were discontinued in 14.1% of patients. The MELD-Na score was the only independent predictor of 24-month mortality in the nominal logistic regression model (p<0.01).

CONCLUSION: NSBB therapy with either propranolol or nadolol was not associated with increased mortality in patients with end-stage cirrhosis.
VA – TRANSITIONS OF CARE & PHARMACY INFORMATICS

PL V-1
DEVELOPMENT AND IMPLEMENTATION OF A PHARMACIST-LED MEDICATION ACCESS PRE-SCREENING PROGRAM. Alyssa A. Kmet, Kristin L. Elzey, Methodist Dallas Medical Center, Dallas, TX.

PURPOSE: The purpose of this presentation is to describe the development and implementation of a transitions of care (TOC) pharmacist-led medication access pre-screening program for high-cost medications at Methodist Dallas Medical Center (MDMC). In order for pharmacists to ensure safe and effective medication use across the care continuum, an evaluation of the patient’s ability to adhere to outpatient medication regimens by considering medication affordability is essential. The goal of this program is to ensure patients can afford prescription co-payments for newly-initiated high-cost medications upon hospital discharge for the duration of therapy.

METHODS: After initial meetings with pharmacy leadership, case management leadership, and Walgreens Pharmacy, the provider of the Discharge Medication Bedside Delivery Program at MDMC, the hospital-wide medication access pre-screening pilot program was implemented on January 8, 2018 by the TOC pharmacy resident. The resident was responsible for (1) running daily reports identifying patients newly-initiated on high-cost medications, (2) collaborating with case managers, nurses, physicians, and patients to determine prescription coverage of newly-initiated high-cost medications, and (3) facilitating use of the Discharge Medication Bedside Delivery Program, in order to resolve medication access issues discovered by the retail pharmacist prior to discharge.

RESULTS: The resident spent an average of 2 hours per weekday assessing patients’ access to high-cost medications. All dosing was reviewed for appropriateness based on indication and renal function. Medication and disease education was provided upon physician request. Additional results from the medication access pre-screening program are pending.

CONCLUSION: Successful implementation of a TOC pharmacist-led medication access pre-screening pilot program relied on patient-centered, multidisciplinary collaboration with community pharmacists, case managers, nurses, and physicians. Incorporating this program into the existing clinical pharmacist workflow at MDMC has the potential to expand the Discharge Medication Bedside Delivery Program as well as improve medication access and adherence.

PL V-2
IMPACT OF A PHARMACIST LED DIABETES DISCHARGE COUNSELING PROGRAM. Justin R. Pedigo, Charles F. Seifert, Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

PURPOSE: To determine the impact a pharmacist led diabetes discharge counseling program had on hospital utilization.

METHODS: The institutions electronic records were searched for all-cause readmissions for patients with diabetes from 1 October 2013 through 30 September 2017. It was then determined which patients had received diabetic discharge counseling from a designated “diabetic discharge pharmacist”, and all-cause readmissions were measure before and after pharmacist intervention to determine the impact diabetic discharge counseling had on all cause hospital readmissions including emergency department visits.

RESULTS: An analysis of 500 patients who had received diabetes discharge counseling was performed to determine the effect diabetes discharge counseling had on all cause hospital readmissions including emergency department visits before and after counseling was performed.

CONCLUSION: Preliminary data suggests patients who received diabetes discharge counseling had lower all cause hospital readmissions including emergency department visits.

PL V-3

PURPOSE: Documenting the best possible medication history (BPMH) is the cornerstone of the medication reconciliation process and can significantly decrease medication errors and adverse drug events (ADEs). Medication reconciliation is an integral part of the transitions of care process, can help bridge the gaps of communication, and can mitigate medication misadventures. During transitions, healthcare professionals collaborate in an organized, multidisciplinary program to improve medication safety as the patient moves between different levels of care or patient care settings. Pharmacists are uniquely positioned to coordinate the medication reconciliation process, however, at our current health system, the pharmacy department is not formally involved in the process. The purpose of this study is to evaluate the medication-related errors identified in medication histories completed by pharmacy students and clinical pharmacists, compared to medication histories completed by emergency center providers, for patients admitted through the emergency center at a large, academic hospital within the health system.

METHODS: This 10-week pilot study evaluated the impact of a pharmacy student-led medication history program within a large, academic hospital. Pharmacy students completing Introductory Pharmacy Practice Experiences (IPPE) and Advanced Pharmacy Practice Experiences (APPE) rotations were provided standardized training to complete medication histories on patients who were admitted from the emergency department. Pharmacy
students were instructed to document each medication history on a data collection sheet during the patient interview. Following the interview, pharmacy students transferred the information to the home medication list in the patient’s electronic medical record (EMR). Patients were excluded if they were unconscious, critical, isolated, or in the psychiatric emergency department. Emergency department providers completed medication histories for patients prior to admission and served as the control group. Pharmacy students and clinical pharmacists served as the intervention group and completed medication histories for the same patients, but after the patient’s status changed to admission status. A clinical pharmacist supervised the students at all times and verified the medication histories completed by the students. The primary objective is to determine the number of medication discrepancies captured in medication histories completed by pharmacy students and clinical pharmacists compared to medication histories completed by emergency department providers. The secondary objectives included identifying types of errors and discrepancies captured by pharmacy students and pharmacists, cost impact on the institution, average time to complete a medication history by a pharmacy student, the number of errors by therapeutic class, and the types of errors by therapeutic class. The specific types of errors and discrepancies evaluated for were: discontinued/not taking drug, incorrect/missing drug, incorrect/missing dose, incorrect/missing route, incorrect/missing frequency, incorrect/missing allergy, incorrect/missing formulation, and duplication. Inferential and descriptive statistics will be used to assess the differences between the control group and intervention group. This study has obtained Institutional Review Board exemption status.

RESULTS: At completion of the 10-week pilot, the students completed 113 medication histories, missed opportunities on 36 patients, and captured 328 discrepancies. Pharmacy students captured an average of 3.26 discrepancies on medication histories for admitted patients. The average time for a pharmacy student to complete a medication history interview was 13.69 minutes. The majority of discrepancies captured were discontinued/not taking drug (n=181) and incorrect/missing drug (n=132). The majority of discrepancies by therapeutic class were associated with analgesic medications followed by hypertension medications.

CONCLUSION: Pharmacy involvement within the medication reconciliation process demonstrated positive outcomes. The health system can benefit from a comprehensive medication history program involving the pharmacy department and that focuses on transitions of care.

PL V-4
ANESTHESIOLOGIST ELECTRONIC DOCUMENTATION PATTERNS BEFORE AND AFTER IMPLEMENTATION OF A SOPHISTICATED COMPUTERIZED PHYSICIAN ORDER ENTRY CONFIGURATION. Madison M. Murphy, Julia M. Chiappe, INTEGRIS Baptist Medical Center, Oklahoma City, OK.

PURPOSE: Utilization of a computerized order entry configuration, implemented to remind anesthesiologists of the health-system’s established sugammadex restrictions, will be evaluated. The objective of this retrospective chart analysis is to compare the differences in documentation patterns within the electronic medical record (EMR) before and after implementation of a specific configuration of the electronic medical record for sugammadex. The primary documentation patterns to be compared retrospectively will include the rationale for utilization of sugammadex, completion of sugammadex dose charting, and documentation of post-operative education.

METHODS: This retrospective chart analysis included adult patients within the affiliated health system who received sugammadex neuromuscular blockade reversal post-operatively before and after configuration implementation between June 15, 2017 to September 15, 2017 and November 15, 2017 to January 15, 2018, respectively. Data obtained for the analysis included: patient demographics, clarity and mode of indication and dose documentation, principle and secondary operative procedure, total anesthesia time, and the presence of post-operative education documentation for women of childbearing age. Data from the anesthesia documentation was evaluated to determine compliance with the computerized order entry configuration, compliance with the health-system’s established sugammadex restrictions, and areas for improvement.

RESULTS: Analysis of pre-configuration data (N = 192) revealed that no documentation of sugammadex indication was present in the EMR. Twenty-two charts (11.5%) did not contain the dose of sugammadex administered. The 17 female patients that met child-bearing age criteria did not have documentation of the post-operative education regarding the sugammadex drug interaction in the discharge summary. Preliminary results of the post-configuration data (N = 157) revealed that one chart (2.7%) contained a documented indication of use out of the 37 patients currently reviewed. Seven charts (18.9%) did not contain the dose of sugammadex administered. Two of the three females (66.7%) that met child-bearing age criteria had post-operative education documented.

CONCLUSION: Based on the preliminary data, the computer order entry configuration did improve documentation; however, the results were not as significant as expected. Further evaluation will be required due to an unanticipated alteration in the configuration that occurred during the data collection process that may have influenced the documentation and the results.

PL V-5
EVALUATING THE IMPACT OF PHARMACY DRIVEN INTERVENTIONS ON PATIENTS WITH HYPERGLYCEMIA WHO HAVE BEEN IDENTIFIED BY USE OF A CLINICAL SURVEILLANCE SOFTWARE SYSTEM. Michael Wisner, Justin Booth, Debbie Poland, Norman Regional Health System, Norman, OK.

Purpose: The primary objective of this quality improvement project is to assess the impact of implementing a pharmacist focused glycemic management tool and to assess the feasibility of system wide implementation of such a tool.

Methodology: This is a single center quasi-experimental quality improvement study. A clinical surveillance software system was used to identify patients who met certain parameters or “rules”. Specifically, the study rule targeted lab values consistent with persistent hyperglycemia and/or any incidence of hypoglycemia. Identified patients were
reviewed by a pharmacist to assess if possible interventions could be made that would optimize the patient’s medication therapy. These interventions included correcting medication related errors, and suggesting the initiation or adjustment of insulin therapy to the patient’s prescriber. The primary outcome measured was patient-day weighted mean blood glucose levels. Secondary outcomes included percent of patient days in goal blood glucose range, incidence of hypoglycemia, the number of interventions made, and the acceptance rate of recommendations. The study was performed by one pharmacist during a one month period covering approximately 60 beds, distributed on two wards of Norman Regional Healthplex Hospital. In order to assess the rule itself, a retrospective chart review was performed for all the patients identified by the rule who could have potentially been reviewed by the pharmacist, defined as being actively identified by the rule for 4 hours on a weekday from 8am to 5pm.

**Results:** No statistical difference was observed for the primary endpoint of patient-day weighted mean blood glucose: pre-study period (172 mg/dL) vs study period (164 mg/dL), Kruskal-Wallis chi-squared test p-value = 0.5773. In total, 157 patients were identified by hyperglycemia rule, of which 76 were considered potentially reviewable. 46 patients were identified by hypoglycemia rule, of which 44 were considered potentially reviewable. 22 total interventions were made: 4 involving medication ordering errors, 10 involving medication administration errors, 2 involving lab ordering errors, 6 involving recommendations for medication therapy adjustment to the prescriber (4 were accepted and 2 were rejected).

**Conclusion:** This study failed to show any significant difference in our primary outcome, which is not unexpected considering the relatively low number of interventions. However, trends were observed regarding certain types of medication errors that occurred and these trends can be corrected independently. Medication error specific rules can be written that will be more sensitive and require less time to review when compared with the study rule. In addition, during the study some issues with our drug information systems were identified and corrected, such as discrepancies in drug labeling in the drug database. Other issues were identified that are correctable but will require addressing procedural and cultural issues via change management, such as frequently late or missed administrations of correctional insulin.

**VIA – EMERGENCY MEDICINE**

**PL VI-1**

PYRIDOSTIGMINE BROMIDE 30MG STABILITY IN EXTENDED STORAGE CONDITIONS. Maj Joanna Heskett, Denis P. Lovett, Irene Lo, San Antonio Military Medical Center, San Antonio, TX.

**PURPOSE:** Pyridostigmine bromide 30mg is approved by the Federal Drug Administration (FDA) as a pre-treatment of nerve gas exposure. The package insert specifies pyridostigmine needs to be stored refrigerated between 2° and 8° C and discarded three months after removal from the fridge and dispensing. Most active duty members who are dispensed pyridostigmine bromide 30mg deploy for periods longer than three months. The objective of this study is to determine the stability of pyridostigmine under extended storage conditions.

**METHODS:** Two hundred and ten pyridostigmine tablets from the same lot are stored under controlled temperature and humidity. The tablets will be tested at 0, 3, 4, 5, and 6 months after removal from refrigerator when stored at both ideal and manipulated storage conditions. The ideal storage conditions are defined as controlled room temperature as specified by the United States Pharmacopoeia (USP) <659>-. The real-life storage conditions are determined using the International Commission for Harmonization’s (ICH) Quality Guidance definitions of storage conditions required for stability testing in order to obtain new drug approval in different climate zones. At each testing interval, tablet samples will be removed from the manufacturer’s packaging and analyzed using high-performance liquid chromatography to determine the content of the drug substance in the tablets (assay) and to assess the degradation by-products. Each measurement will be performed in triplicate. The study will use ICH’s definition for significant change (a change from the initial content of 5% or more as detected by assay) to determine pyridostigmine stability at the end of each testing period.

**RESULTS:** pending

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**PL VI-2**

ASSESSMENT OF DIVIDED-LOAD VANCOMYCIN DOING VERSUS TRADITIONAL VANCOMYCIN DOING IN THE OBESE POPULATION. Erica Helen Rath, Craig Cocchio, Justin Hooper, Wyley McCoy. CHRISTUS/Trinity Mother Frances Hospital. Tyler, TX.

**PURPOSE:** To demonstrate safety and efficacy of divided vancomycin loading doses compared to conventional loading doses in the obese population. Pharmacokinetics support the safety of divided loading doses of vancomycin. Differences observed seek to confirm the efficacy of this practice.

**METHODS:** Using data retrospectively collected from the electronic record, we compared the percentage of vancomycin troughs that were within therapeutic range (10-20 mcg/mL) between patients who received traditional
vancomycin loading doses of 2000 mg versus patients who received divided loading doses. Secondary endpoints included nephrotoxicity and time from order verification to administration.

**RESULTS:** Analysis was performed on 51 patients. The percentage of patients with a therapeutic trough defined as 10-20 mcg/mL was 72.22% versus 58.62% (p=0.533) for the divided loading group and the traditional loading group respectively. There was no difference in nephrotoxicity with serum creatinine peaks of 1.13 v 1.42 (p=0.2) for divided loading group and the traditional loading group respectively. The time to first dose of vancomycin was significantly shorter for the divided loading dose group compared to the traditional loading dose group (92.48 min vs 173.93 min, p= 0.049).

**CONCLUSION:** There is no difference in percentage of patients with therapeutic troughs at steady state. Divided loading dose vancomycin regimens offer a similar time to therapeutic trough, no difference in nephrotoxicity, and a faster time to first dose of antibiotic for obese patients.

**PL VI-3**

**EVALUATION OF READMISSION RATES AND POTENTIAL COST SAVINGS IMPACT WITH THE USE OF ORITAVANCIN IN CELLULITIS PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT.** Amrita Das, Michael Olmos, Meagan Johns, Kristi Carter, Texas Health Harris Methodist, Fort Worth TX.

**PURPOSE:** In 2014 oritavancin (Orbactiv®, The Medicines Company), a single-dose IV antibiotic, was approved for the treatment of patients with acute bacterial skin and skin structure infections (ABSSSIs) caused by gram-positive organisms including MRSA. The unique dosing strategy of oritavancin allows the potential to treat hemodynamically stable patients in the emergency department (ED) as outpatients rather than admitting them to the hospital. The purpose of this study is to evaluate cellulitis readmission rates and potential cost savings with the use of oritavancin as outpatient treatment for ABSSSIs in patients presenting to the Texas Health Harris Methodist Fort Worth ED.

**METHODS:** This is a single center prospective cohort study approved by our hospital IRB. A pharmacy led protocol was written to determine patients that met inclusion and exclusion criteria for oritavancin. Retropective patient data were collected of cellulitis patients that had presented to the ED from December 2016 to July 2017 using ICD 9 codes. These patients were included as part of the control group if they met inclusion criteria and did not meet exclusions for oritavancin. Beginning December 2017, patients with cellulitis arriving to the ED were screened and administered oritavancin if inclusion criteria was met. Inclusion criteria for oritavancin administration in the ED and observation unit setting included outpatient antibiotic failure, socioeconomic status constraints such as homeless, HIV, IVDA, certain psychiatric conditions and where compliance is of concern. The primary endpoint was 30 day cellulitis readmission to the hospital and secondary endpoints of 90 day cellulitis readmission, length of stay, variable costs of stay and readmission length of stay. A sample size of 272 patients is needed for statistical significance. For continuous variables that are normally distributed a t-test will be used, for non-normally distributed data a Mann-Whitney U test will be used and for discreet variables a chi-squared and Fisher’s exact test will be used. Other data points collected include ED revisits for cellulitis, history of diabetes, heart failure, renal function, microbiology data, history of MRSA, WBC and insurance status.

**RESULTS:** A total of 41 cellulitis patients were identified that would have met criteria for oritavancin. Fourteen patients have received oritavancin and are a part of the treatment group. The majority of patients in both groups qualified for oritavancin due to outpatient antibiotic failure. Thirty-one percent of patients in the control group compared to 21% in the treatment group met inclusion due to psychiatric issues, such as dementia and schizophrenia. The average length of hospital stay in the control group was 4.7 days while average length of time in the ED and observation unit was less than a day in the treatment group. In the treatment group, there have not been any patients readmitted to the hospital within 30 days thus far for cellulitis compared to 7.3% in the control group. Two patients returned to the ED for cellulitis related concerns in the treatment group.

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

**PL VI-4**

**CLINICAL OUTCOMES ASSOCIATED WITH THE USE OF MEASURED WEIGHTS IN PATIENTS RECEIVING THROMBOLYSIS FOR ACUTE ISCHEMIC STROKE.** Alexander Joachim, Chase Waxler, Memorial Hermann Southwest Hospital – Houston, TX.

**PURPOSE:** First line treatment for acute ischemic stroke (AIS) is the administration of a weight-based dose (0.9 mg/kg; 90 mg maximum dose) of recombinant tissue plasminogen activator (rtPA) within 3 to 4.5 hours of symptom onset. Excessive dosing has been associated with clinically significant bleeding. Despite weight-based dosing and dose-related adverse effects, rtPA may still be dosed using estimated patient weights. This study sought to evaluate the clinical outcomes associated with the use of either estimated or measured patient weights in the dosing of rtPA in patients being treated for presumed AIS in the emergency department (ED).

**METHODS:** A single center retrospective observational cohort study was conducted in patients with presumed AIS administered rtPA in the ED from July 1st 2014 to December 31st 2017. Patients were excluded if they underwent thrombectomy, intra-arterial therapy (IAT), or were missing baseline characteristics. Patients were stratified if their rtPA dose was determined from an estimated or a measured weight. The primary outcomes were documented intracranial hemorrhage (ICH) and door-to-needle time. Secondary outcomes were the proportion of patients that received an appropriate dose (0.85 mg/kg – 0.95 mg/kg), length of stay (LOS) and disposition.

**RESULTS:** Overall, 171 patients were reviewed for inclusion; 27 were missing baseline documentation, 4 were administered rtPA for other indications, and 3 underwent thrombectomy or IAT, leaving 137 patients for inclusion. The number of patients in the estimated and measured cohorts was 74 and 63 respectively. The primary outcome of ICH occurred in 6.8% of the estimated cohort compared to 4.8% in the measured cohort. Door-to-needle times were 68 and 47 minutes in estimated and measured cohorts respectively. The proportion of patients receiving appropriate doses in the estimated and measured cohorts was
CONCLUSION: ICH occurred less frequently in patients who had their weight measured prior to rtPA administration and a greater percentage of them were discharged home. Obtaining measured weights did not appear to adversely impact door-to-needle times. Despite measuring patients, both groups had a similar percentage of patients receiving the appropriate dose reflecting potential inconsistencies in obtaining patient weights. These findings are limited by the small sample size and retrospective nature of this study.

BACKGROUND: Supraventricular tachycardia (SVT) is a frequent Emergency Department (ED) presentation. Patients with symptomatic SVT require rapid evaluation and administration of appropriate therapy, such as adenosine, to restore normal sinus rhythm (NSR). Little exists in the way of dosing recommendations in patients who are obese or when guideline-recommended doses of intravenous adenosine (6mg, followed by 12mg) fail to control or terminate SVT, of which the former may affect the later.

OBJECTIVE: Evaluate weight-stratified dosing of adenosine.

METHODS: This single center, retrospective chart review was approved by the Institutional Review Board at University Health System and included all adult patients admitted to the ED or Intensive Care Units who received adenosine for management of SVT. Exclusion criteria included: age less than 18 years and those who received adenosine for the purposes of diagnosing tachyarrhythmia. Each individual dose of adenosine was collected and normalized to patient actual body weight. Adenosine doses ≥ 0.1 mg/kg were compared to doses < 0.1 mg/kg for the primary endpoint of termination of SVT. Secondary objectives were to compare number of doses to successful attempt and adverse effects of higher adenosine dosing. Adverse events were defined as the occurrences of either of the following post administration of highest dose of adenosine: bradycardia defined by heart rate < 60 bpm or asystole as seen on EKG.

RESULTS: Forty-eight patients were evaluated with a mean age of 58.8 ± 16.0 years. The majority of patients (62.5%) were female with a median weight of 75kg (range 66-91kg). Conversion to NSR occurred in 9/11 (81.8%) vs 19/37 (48.7%) for those who received a dose ≥ 0.1mg/kg vs controls (p=0.08). Post-hoc statistical power of the primary outcome was 49.2% for our sample. For secondary outcomes, 11 (23.9%) patients achieved NSR with the 1 dose while 35 (76.1%) patients required additional dosages. No adverse effects were seen with higher doses of adenosine.

CONCLUSION: There was no significant difference in successful conversion of SVT to NSR based on weight stratified dosing of adenosine, though conversion to NSR was more likely upon repeated dosing.

VIIA – AMBULATORY CARE

PL VI-5
EVALUATION OF WEIGHT-STRATIFIED ADENOSINE DOSING FOR PATIENTS WITH SUPRAVENTRICULAR TACHYCARDIA. Sharmin Amjad, Bethany A. Kalich, Ellen Robinson, Amanda Fowler, and Darrel W. Hughes. Department of Pharmacy, University Hospital, University of Texas Health San Antonio, University of Texas Austin College of Pharmacy; University of the Incarnate Word Feik School of Pharmacy, San Antonio, Texas.

BACKGROUND: Supraventricular tachycardia (SVT) is a frequent Emergency Department (ED) presentation. Patients with symptomatic SVT require rapid evaluation and administration of appropriate therapy, such as adenosine, to restore normal sinus rhythm (NSR). Little exists in the way of dosing recommendations in patients who are obese or when guideline-recommended doses of intravenous adenosine (6mg, followed by 12mg) fail to control or terminate SVT, of which the former may affect the later.

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RESULTS: Forty-eight patients were evaluated with a mean age of 58.8 ± 16.0 years. The majority of patients (62.5%) were female with a median weight of 75kg (range 66-91kg). Conversion to NSR occurred in 9/11 (81.8%) vs 19/37 (48.7%) for those who received a dose ≥ 0.1mg/kg vs controls (p=0.08). Post-hoc statistical power of the primary outcome was 49.2% for our sample. For secondary outcomes, 11 (23.9%) patients achieved NSR with the 1 dose while 35 (76.1%) patients required additional dosages. No adverse effects were seen with higher doses of adenosine.

CONCLUSION: There was no significant difference in successful conversion of SVT to NSR based on weight stratified dosing of adenosine, though conversion to NSR was more likely upon repeated dosing.

VIIA – AMBULATORY CARE

PL VII-1
IMPACT OF SERVICE LEARNING ACTIVITIES ON PREPAREDNESS FOR THIRD YEAR INTRODUCTORY PATIENT CARE SKILLS ROTATIONS. Mary R. Shreffler, Krystal K. Haase, Taryn B. Bainum, Rachel L. Basinger, Texas Tech University School of Pharmacy, Amarillo, TX.

BACKGROUND: Service learning is an educational opportunity that places pharmacy students in health care roles outside of traditional hospitals, pharmacies, and clinics. These opportunities target unmet healthcare needs while building professional skills. Participation in service learning has been shown to improve student knowledge, communication skills, and awareness of health care complexities. To our knowledge, there are no studies evaluating the impact of service learning on preparedness for future patient care rotation experiences. We hypothesize that students who have more meaningful service learning activities will demonstrate greater preparedness for patient care-centered third-year introductory pharmacy practice experiences (IPPE).

PURPOSE: The primary objective is to determine the relationship between service learning activities completed in the first and second year and student preparedness for subsequent patient-care-focused IPPE. Secondary objectives include characterization of the service learning activities completed by students and assessment of their self-perceived confidence and readiness to participate in patient care roles. The study will also assess student awareness of expected professional attitudes and behaviors.

METHODS: This is a retrospective survey of Doctor of Pharmacy students enrolled in third-year patient care skills IPPE at Texas Tech University Health Sciences Center School of Pharmacy. Students will be surveyed to determine the types and quantities of service learning activities completed in their first and second year, including types of services provided, patient care roles, and number of patient interactions. Students will also be queried regarding perceived readiness to perform patient care activities during their skills rotation. Descriptive statistics will be used to characterize subject demographics. Scaled (ordinal) data will be analyzed using Mann-Whitney U. Spearman rank correlation will be used to determine relationships between service learning activities and rotation readiness.

RESULTS/CONCLUSION: This project is under review by the TTUHSC IRB. Preliminary results will be presented pending approval.
PL VII-2
METFORMIN MISSED OPPORTUNITIES: EFFECTS OF METFORMIN THERAPY IMPELEMENTATION IN APPROPRIATE PATIENTS WITHIN THE CENTRAL TEXAS VETERANS HEALTH CARE SYSTEM. Sarah Fry, Christine Wicke, Central Texas Veterans Health Care System, Temple, Texas.

PURPOSE:
Metformin is a proven medication to aid in management of blood glucose levels in patients diagnosed with type 2 diabetes mellitus (T2DM). Despite being considered first-line therapy, May 2017 VISN17 PBM data indicated nearly 6000 veterans diagnosed with T2DM within the Central Texas VA were not prescribed metformin. Our objective is to demonstrate addition of metformin to a current diabetes medication regimen can lead to improved glucose control in patients whose glycohemoglobin is 8 percent or greater and reduce hypoglycemia incidence in veterans able to reduce the use of insulin and sulfonylureas.

METHODS:
VISN17 PBM identified patients with a diagnosis of type 2 diabetes and an A1c on file within 3 months of initiation of metformin between November 2017 and January 2018. Baseline data collected will include glycohemoglobin (A1c) and estimated glomerular filtration rate (eGFR) within 3 months; age; sex; current T2DM medications; history of metformin use. Data will be maintained securely and without patient identifiers. Change in A1c will be determined for those veterans with a baseline A1c 8 percent or greater, and the frequency of reported or objectively identified hypoglycemia will be determined in veterans able to discontinue or reduce their dose of insulin or insulin secretagogue medications.

RESULTS:
Pending

CONCLUSIONS:
Pending

PL VII-3
EVALUATION OF ANTICOAGULATION PRESCRIBING PREFERENCES AMONG MIDLEVEL PRACTITIONERS AND PHYSICIANS IN LOUISIANA. Hannah N. Naquin, Ashley M. Taylor, Daniel Sarpong, Christopher J. Gillard, Janel Bailey Wheeler, Xavier University of Louisiana College of Pharmacy.

PURPOSE:
Until the development of the direct oral anticoagulants (DOACs), warfarin was the anticoagulant of choice in nonvalvular atrial fibrillation and venous thromboembolism (VTE). There are many limitations to its use. The DOACs have been proven to be noninferior or superior to warfarin, and these agents have less drug/food interactions, do not require routine monitoring, and have a more simplistic dosing regimen. The objective of this study is to evaluate anticoagulation prescribing preferences among healthcare providers in Louisiana, and to determine consistency with the current CHEST Guidelines. A secondary objective is to determine the reasoning for the providers’ preferences.

METHODS:
This is a cross-sectional, online survey based-research study. A voluntary sample of providers was surveyed with assistance from their medical organizations in the state of Louisiana. Prior to conducting this survey research, Institutional Review Board approval was obtained from Xavier University of Louisiana. Key data collected included: the provider’s age, location of primary practice, specialty, duration of practice, and payer types serviced. Additional questionnaire items included anticoagulation scenarios where the provider chose his or her preference followed by the reasoning for his or her selection. Responses were reviewed for consistency with the current CHEST Guidelines. Based on providers’ responses and the reasoning for their choice of anticoagulation, provider education will be offered to close gaps in knowledge. Survey data was exported into SAS with all provider identifiers removed. Statistical analysis will be performed using SAS 9.4, and all tests were conducted at a significance level of 0.05.

RESULTS:
Research is still in progress; thus, results are preliminary. To date, 40 providers have completed the anticoagulation survey including 36 (90%) nurse practitioners and 4 (10%) physicians. The majority of the respondents were between the ages of 36-45 (42.5%) who practiced in the primary care setting (42.5%). For a patient presenting with a deep vein thrombosis and no pertinent medical history, 95% of respondents preferred a direct oral anticoagulant, and 5% preferred warfarin. In the setting of a deep vein thrombosis and a previous, resolved gastrointestinal bleed, 65% of respondents preferred a direct oral anticoagulant and 33% preferred warfarin. Lastly, 49% of respondents preferred a direct oral anticoagulant and 51% preferred warfarin in a patient presenting with nonvalvular atrial fibrillation and chronic kidney disease stage 5. Among providers who preferred warfarin, cost was weighted more heavily in their decision. The complexity of the regimen, lack of routine monitoring, and less food/drug interactions was weighted more heavily in providers who preferred direct oral anticoagulants.

CONCLUSION:
Although preliminary, the survey data suggests that the majority of providers preferred a direct oral anticoagulant in most thromboembolic patient scenarios in the setting of normal renal function.

PL VII-4
SCREENING AND PRESCRIBING PATTERNS OF ACE INHIBITORS OR ANGIOTENSIN RECEPTOR BLOCKERS FOR DIABETIC NEPHROPATHY. Hannah Lenamon, Rachel Basinger, Texas Tech University Health Sciences Center School of Pharmacy, Amarillo, TX.

PURPOSE: To assess the adherence of nephropathy screening and prescribing patterns to the 2017 ADA Standards of Medical Care in Diabetes guideline recommendations of physicians within the Texas Tech Family Medicine and Internal Medicine clinics.

METHODS: A retrospective chart review was performed of diabetic patients who had been seen by one of the clinic’s attending physicians between 07/01/2016 and 09/30/2017. Patients with diabetes were assessed to determine if providers appropriately screened for nephropathy and prescribed angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy based on diagnostic results. Forty-four patients were needed for this study to achieve 80% power, assuming a significance level of 0.05. Data was analyzed with a two-sided Fisher’s exact test.

RESULTS: A total of 373 patients were included in the study – 220 patients from the Family Medicine (FM) clinic and 153 patients from the Internal Medicine (IM) clinic.
Significant differences noted in baseline characteristics between the two clinics include age at date of service, diastolic blood pressure, initial serum creatinine, calculated creatinine clearance, smoking status, and other past medical history. There were 115 patients who had been screened for diabetic nephropathy according to guideline recommendations; interpreted as an overall adherence rate of 30.8% between the two clinics. Of the 115 patients who were screened, 77 patients were appropriately prescribed either ACE inhibitor or ARB therapy based on screening results; interpreted as an overall adherence rate of 66.9% between the two clinics. Appropriate screening was statistically significantly different for FM patients versus IM patients (46.36% vs. 8.55%, p < 0.001). Appropriate prescribing was statistically significantly different for FM patients versus IM patients (42.14% vs.16.95%, p = 0.001).

**CONCLUSION:** Based on the data acquired throughout the study, adherence to the 2017 ADA guideline recommendations for screening and prescribing ACE inhibitor or ARB therapy for diabetic nephropathy is suboptimal. The data demonstrates room for improvement in both clinics for screening and prescribing therapy based on a confirmed diagnosis and may receive greater benefit from targeted interventions.

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**PL VII-5**

**IMPACT OF ADHERENCE PACKAGING ON MEDICATION ADHERENCE AND HEALTH OUTCOMES AMONG PATIENTS LIVING WITH DIABETES, HYPERLIPIDEMIA, OR HYPERTENSION.** Michelle O. Ndiulor, Sara Brouse, Benjamin McNabb, Love Oak Pharmacy, Eastland, TX.

**PURPOSE:** Adherence packaging interventions have widely been recommended and used to address medication adherence issues. Previous studies suggest improved medication adherence with use of adherence packaging. However, the impact of adherence packaging interventions on patient health outcomes has rarely been reported. The objective of this study is to examine and advance the understanding of the influence of adherence packaging on the improvement of medication adherence and its associated effects on blood pressure (BP), low-density lipoprotein (LDL), and hemoglobin A1c (A1c).

**METHODS:** Using health outcomes and medication adherence data retrospectively collected from Eastland Memorial Hospital, local physician’s offices, and Love Oak Pharmacy, we collected and analyzed baseline and post medication adherence, A1c, LDL, and/or BP in patients using the Love Oak Pharmacy adherence packaging service. Patients had to have started their adherence packaging between January 1, 2016 and July 31, 2017. Medication adherence was defined as a proportion of days covered (PDC) greater than 80%. Improved health outcomes were defined as any reduction seen in BP, LDL, and/or A1c post adherence packaging start date.

**RESULTS:** In Progress

**CONCLUSION:** In Progress

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**PL VII-6**

**EVALUATING THE EFFECTIVENESS OF INTERVENTIONS MADE THROUGH THE VETERANS AFFAIRS HYPOGLYCEMIA SAFETY INITIATIVE.** Kelly Hang, Tyson Kubena, Heather Cave, West Texas Veterans Affairs Health Care System (WTXVAHCS), Big Spring, TX.

**PURPOSE:** To determine the need for diabetic medication reduction and A1c goal relaxation in WTXVAHCS patients at high risk for hypoglycemia based on the Veteran Affairs Hypoglycemia Safety Initiative (VA HSI’s) criteria that have no self-reported hypoglycemic events during the Patient Aligned Care Team’s (PACT’s) assessment over the past year (10/1/2016 – 10/31/2017).

**METHODS:** A list of patients meeting the VA HSI’s risk factor criteria who reported no hypoglycemic events during PACT’s assessment over the past year were obtained via a structured query language (SQL) report. Through telephone calls and chart review, the following outcomes were measured: any occurrence of hypoglycemic events, hospitalizations, and other potential risk factors and assessments, such as age cohorts, regimen types, irregular diet, and understanding of drug regimen or administrations.

**RESULTS:** 185 patients met the VA HSI’s risk factor criteria who reported no hypoglycemic events during PACT’s assessment at baseline in November 2017’s SQL report. 170 patients remained upon follow-up encounters in February 2018 as 10 patients were deceased and 5 patients moved to another VA. 22 patients (13%) reported hypoglycemic symptoms—1 patient was taking basal insulin, 5 patients were taking basal-bolus insulin, 15 patients were taking secretagogues, and 1 patient was taking combination of insulin and secretagogues. Primary reasons were irregular eating (10 patients) and misunderstanding of administration (6 patients), but a few patients were not able to attribute a cause (3 patients). 8 of the 22 patients with hypoglycemic symptoms (36.4%) had an intervention via medication discontinuation or therapy relaxation.

**CONCLUSION:** The majority of the patients meeting the VA HSI’s criteria reported no hypoglycemic events despite being high-risk for hypoglycemia. However, for those that experienced hypoglycemic symptoms, the majority were taking secretagogues. Primary reasons for these symptoms were due to irregular meal schedule and misunderstanding of administration. Based on the data, medication education should be re-visited and re-emphasized with each patient visit; however, the need for diabetic medication reduction and A1c goal relaxation may not be warranted in all patients at high risk for hypoglycemia based on the VA HSI’s criteria.

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**PL VII-7**

**ANTICOAGULATION CLINIC MONITORING FOR DIRECT ORAL ANTICOAGULANT PATIENTS AND EFFECTS ON CLINICAL OUTCOMES.** Dao C. Ly, Delaney R. Ivy, Sandy Diec, Elmor Pineda. Baylor Health Enterprises, Temple, TX.

**PURPOSE:** Not all direct oral anticoagulant (DOAC) patients are referred to the anticoagulation clinic, which are routinely use for vitamin K antagonist monitoring, but doing so may help reduce potential risk while also optimizing efficacy of these medications. The clinical impact of anticoagulation clinic monitoring of DOAC patients has yet
RESULTS: Research in progress

CONCLUSION: Research in progress

PL VII-9
FACTORS AFFECTING ACCESS TO CARE FOR LOW SOCIOECONOMIC STATUS PREGNANT DIABETICS: IMPLICATIONS IN A COMMUNITY-BASED TEACHING HOSPITAL. Michael Aucoin and Fancy Manton, Woman’s Hospital, Baton Rouge, LA.

Purpose: Diabetes remains a complex medical issue in the U.S., with an estimated 30 million people meeting diagnostic criteria and 7.2 million undiagnosed. Diabetes is a complicated condition to treat, requiring detailed planning by the healthcare team and patient cooperation. Pregnant patients with diabetes are considered a high risk population, due to the possibility of poor maternal and fetal outcomes. Pregnant women of low socioeconomic status provide an even more pressing problem, as many face multiple barriers to adequate healthcare; low medical literacy, lack of transportation, and poor support network are all examples of these barriers. Previous research has shown promising patient outcomes when clinical pharmacists play a frontline role in diabetic patient care; however, if patients cannot access health care, then pharmacists may miss crucial opportunities to provide potentially valuable medication counseling. The purpose of this study is to measure and analyze factors and causes that prevent pregnant diabetic women in an outpatient OB/GYN clinic from accessing adequate medical care.

Methods: This pilot program is a single center retrospective chart review study aimed at assessing the multitude of barriers pregnant diabetic patients face regarding healthcare access. All patients analyzed will have a diagnosis of type 1, 2, or gestational diabetes mellitus. Chart review will be conducted to collect patient data. The primary endpoint will pertain to healthcare access barriers such as missed appointments, lack of transportation, non-English speaking, lack of support network, and timing of first OB/GYN clinic appointment (in terms of gestation age).

Results: Data collection is pending.

Conclusion: As data collection is still ongoing, conclusions are still pending as of this time.
PL VII-10
THE IMPACT OF CHRONIC KIDNEY DISEASE ON SULFONYLUREA-ASSOCIATED HYPOGLYCEMIA. Lauren Staton, Amy Martin, Wyley McCoy, Jean Dib, CHRISTUS Trinity Mother Frances Health System, Tyler, TX.

PURPOSE: Hypoglycemic event rates observed with sulfonylurea use alone in type 2 diabetics (T2DM) has been reported as high as 7%. Pharmacokinetic data for sulfonylurea agents suggests either dose adjustments in chronic kidney disease (CKD), or increased monitoring for hypoglycemia is warranted in clinical practice. The objective of this study is to quantitatively examine if the presence or absence of CKD impacts the risk of clinically significant hypoglycemia in a cohort of sulfonylurea users.

METHODS: This is a retrospective, single center, cohort study of patients with T2DM who use sulfonylureas. Adult patients were included if they had a diagnosis of T2DM and were a concomitant sulfonylurea user defined as the presence of an active prescription for a sulfonylurea during the evaluation period. Patients were excluded if they were receiving insulin. The presence of CKD was defined as an eGFR<60mL/min/1.73m². A clinically significant hypoglycemic event, defined as a blood glucose level <3.0 mmol/L (=54 mg/dL), or event that required an unplanned clinic appointment, telephone call, ER visit or hospital admission was the primary outcome of interest.

RESULTS: An interim analysis of 50 patients was performed, where 20% of hypoglycemic events occurred in the non-CKD patient population versus 14% in the CKD patient population.

CONCLUSION: Based on interim data, the presence of CKD does not increase the risk of experiencing a hypoglycemic event in T2DM who use a sulfonylurea.

PL VII-12
ASSESSMENT OF METHADONE PRESCRIBING PRACTICES AND CARDIOVASCULAR OUTCOMES IN THE PRIMARY CARE SETTING. Shavea N. Zapata Juan, Maria Maila Veranga, Lisa U. Nguyen, Kevin C. Kelly, Ishak A. Mansi. Veterans Affairs North Texas Health Care System and Texas Tech University Health Sciences Center, Dallas, TX.

BACKGROUND: For many years, methadone has been used as an alternative long-acting opioid analgesic in select patients for the management of chronic pain. In 2006, the US Food and Drug Administration (FDA) required a black box warning regarding the risk of QTc prolongation and Torsades de Pointes (TdP) with the use of methadone. The definition of QTc prolongation varies according to sex (≥450 ms for men and ≥470 ms for women), but the sex-independent threshold starts at 450 ms. Although rare, TdP has been observed at QTc intervals >500 ms.

Limited evidence is available regarding physician compliance with methadone safety practices and incidence of cardiac events in patients treated with methadone, especially among the veteran population in the primary care setting. In 2016, the Veterans Integrated Service Network (VISN) recommended that patients on oral methadone for chronic pain should have 1) a baseline EKG prior to starting methadone; 2) follow-up EKGs when methadone doses reach 30-40mg/day, then again if the dose reaches 100mg/day and when new risk factors for QTc prolongation arise or signs/symptoms of arrhythmia are suggested, and 3) an annual EKG once a stable dose has been reached.

PURPOSE: To evaluate the pattern of methadone prescribing in the primary care clinics within the VA North Texas Health Care System (VANTHCS) in order to determine practice conformance to methadone safety guidelines for chronic pain management. To determine if nurse case managers can facilitate compliance with methadone safety guidelines in the primary care setting.

METHODS: This retrospective cohort study will evaluate adults aged ≥18 years on methadone therapy for chronic pain management in the primary care clinics of Dallas, Bonham, Fort Worth and Tyler within VANTHCS from January 2010 to October 2016. The primary outcome is the composite endpoint of compliance: obtaining patient consent for long-term opioid use for pain management prior to starting methadone, EKGs at baseline and annually after starting therapy, and annual urine drug screen. Secondary outcomes include each component of the primary outcome alone, occurrence of cardiac arrest and ventricular fibrillation, mean frequency of QT interval monitoring, and proportion of patients who had prolonged QTc interval.

RESULTS: Research in progress.

CONCLUSION: Research in progress.

PL VII-11
ASSESSMENT OF RENAL-ADJUSTED ORAL ANTIHYPERGLYCEMIC MEDICATIONS (METFORMIN VS DPP-4 INHIBITORS) FOR GLYCEMIC CONTROL IN PATIENTS WITH TYPE 2 DIABETES AND MODERATE RENAL IMPAIRMENT. Wei K. Yuet, Verónica M. Nieto, Rick A. Weideman, VA North Texas Health Care System, Dallas, TX.

PURPOSE: To assess glycemic control in patients with type 2 diabetes mellitus and moderate renal impairment (estimated glomerular filtration rate of 30 to 45 mL/minute/1.73m²) receiving dose-reduced metformin, sitagliptin, or saxagliptin as monotherapy or dual therapy with a sulfonylurea or thiazolidinedione who present to the VA North Texas Health Care System.

METHODS: This retrospective cohort review collected data from the institution’s electronic records. We compared the change in hemoglobin A1c and fasting plasma glucose at initiation and discontinuation/ study exit of dose-reduced antihyperglycemic agents via unpaired t-tests with Bonferroni correction. We assessed the prevalence of adverse events related to metformin (development of lactic acidosis or vitamin B12 deficiency) and dipeptidyl peptidase-4 inhibitors (development of pancreatitis or arthralgia) via chi-square test.

RESULTS: Research in progress.

CONCLUSION: Research in progress.
IMPACT OF A PHARMACIST-MANAGED ANTICOAGULATION CLINIC IN HEART FAILURE, LUNG TRANSPLANT AND LEFT VENTRICULAR ASSIST DEVICE (LVAD) PATIENT POPULATIONS.
Louise De Souza, Jolly A. Raju, Courtney Wong, Manish Mohanka, Alpesh Amin, UT Southwestern Medical Center, Dallas, TX.

PURPOSE: Beneficial outcomes of anticoagulation therapy with warfarin are dependent on maintaining an international normalized ratio (INR) within therapeutic range. Evidence suggests that better outcomes are achieved when warfarin is managed by anticoagulation pharmacists. Warfarin therapy is challenging in LVAD and transplant patients due to increased risk of complications, such as bleeding and thromboembolism. This study’s goal is to demonstrate the impact of pharmacist management of warfarin in chronic heart failure (CHF), lung transplant and LVAD patients by assessing improvements in time-in-therapeutic range (TTR), reductions in hospitalizations directly related to anticoagulation, and reductions in mortality due to complications of therapy.

METHODS: This retrospective study was submitted to the Institutional Review Board and approved as a quality improvement project. Heart failure, lung transplant, and LVAD patients followed in an outpatient anticoagulation clinic who are over the age of 18 and on warfarin were included in the study if managed one year prior to and/or one year after the transition to pharmacist anticoagulation management. Patient data collected via the electronic medical record system included age, sex, ethnicity, anticoagulation indication, date of organ transplantation or LVAD implantation, warfarin doses, duration of warfarin therapy, therapeutic INR goals, INR values, history of hemorrhage and/or venous thromboembolism (VTE) leading to hospitalizations, duration of hospitalizations, and death. INR values were used to calculate individual TTRs using the Rosendaal method. For patients that had multiple INR goals, each goal’s TTR was counted as a separate entity in the calculation of the overall TTR for each patient population. The primary endpoint is a comparison of TTRs before and after a pharmacist initiated warfarin management. Secondary endpoints include hospitalizations due to gastrointestinal bleed (GIB), intracranial hemorrhage (ICH), or VTE, overall mortality as a result of GIB, ICH, or VTE, and mortality as a result of GIB, ICH or VTE in patients with INRs out of therapeutic range on admission.

RESULTS: A total of 170 patients met inclusion criteria for the non-pharmacist managed cohort and 157 patients met inclusion criteria for the pharmacist managed cohort. Of the 170 patients in the non-pharmacist group, 62 were CHF patients, 36 were lung transplant patients, and 72 were LVAD patients. In the pharmacist cohort, 37 patients were CHF, 36 were lung transplant, and 84 were LVAD patients. For patients in the non-pharmacist group, the average TTR was determined to be 53.5% for CHF, 30.5% for lung transplant, and 53.4% for LVAD. Alternatively, TTRs for the pharmacist cohort were 57.2% for CHF, 45.8% for lung transplant and 52.9% for LVAD patients. Statistical analysis and collection of secondary endpoints are still in progress.

CONCLUSION: Final data collection needs to be completed and data analyzed, however the overall trend appears to be in favor of improvements in TTR after warfarin was transitioned to pharmacist management.

THE IMPACT OF INTERDISCIPLINARY COLLABORATION ON DIABETIC PATIENTS WITH OR WITHOUT HYPERTENSION IN A CHARITY OUTPATIENT CLINIC.
Lyndsay Cole, Amulya Tatachar, Krista Heinrich, Cecilia Hui, Kiara Talabi, Hoa L. Nguyen, Baylor Scott & White Health, Dallas, TX.

PURPOSE: In January 2016, pharmacists, physicians, nurse practitioners, and community health workers, at Baylor Scott & White Health (BSWH) outpatient charity clinics collaborated to provide interdisciplinary services to uncontrolled type 2 diabetics with or without hypertension. The interdisciplinary service was aimed to manage medications, educate patients, and cultivate patient engagement. The purpose of this study is to examine the impact of interdisciplinary collaboration in poorly controlled type 2 diabetic patients with or without hypertension at BSWH outpatient clinics.

METHODS: This study is a multi-center, prospective, chart review of diabetic patients with or without hypertension seen by an interdisciplinary team, including a pharmacist, at six clinics in the Dallas-Fort Worth Metropolitan between October 2016 to February 2018. Patients at least 18 years of age with an initial HbA1c > 9% with or without a diagnosis of hypertension per Joint National Committee (JNCR) guidelines were included in the study. Patients with a diagnosis of type 1 diabetes were excluded. The Institutional Review Board reviewed and approved this study. All patient enrolled have been consented. Patients are referred by their primary care provider to the interdisciplinary team. The interdisciplinary team consisted of pharmacists, nurses trained in health coaching, and/or community health workers. At the initial visit, patients completed a validated Patient Activation Measure® (PAM®) Survey to assess patient engagement. Patients consistently visited with a pharmacist for medication management. The nurse or community health worker met with patients on an as needed basis for lifestyle modification education. All members of the interdisciplinary team partnered to provide health coaching for all patients. Patients completed the same PAM® survey at a follow-up visit. Providers were consulted verbally or through written documentation for approval of medication recommendations. The primary outcome was HbA1c < 8% post-interdisciplinary team intervention. Secondary objectives include achievement of systolic blood pressure <140 mm Hg, achievement of diastolic blood pressure < 90 mm Hg, patient engagement measured by a PAM® survey, diabetes-related hospital admissions, hypertension-related hospital admissions, interventions made by pharmacists, such as addition of aspirin, angiotensin converting enzyme inhibitor (ACEi) or angiotensin receptor blocker (ARB), statin, smoking cessation pharmacotherapy, and vaccinations.

RESULTS: Data collection pending.
Objective: To determine the impact of the updated 2017 American Diabetes Association Standards of Medical Care in Diabetes Guidelines on vitamin B12 monitoring in a veteran population on long-term metformin therapy. The guideline includes a new recommendation for periodic vitamin B12 measurements in metformin treated patients, especially those with anemia or peripheral neuropathy, as metformin can lead to vitamin B12 deficiency with similar symptoms. Secondary objectives included determining the impact of metformin on vitamin B12 levels, and if patients are being supplemented accordingly.

Methods: Electronic medical records of veteran patients on metformin who started therapy in 2014 at the VA North Texas Health Care System (VANTHCS) were reviewed. Vitamin B12 monitoring records were compared for 2016 versus 2017 for each patient. Information regarding incident anemia diagnoses, resulting vitamin B12 levels, and supplementation with cyanocobalamin were also collected. Patients without regular follow-up (defined as <2 A1c’s in 2015), those not consistently prescribed metformin since therapy initiation (defined as proportion of days covered <80%), and those with conditions or medications that could possibly affect vitamin B12 absorption were excluded.

Results: Of 88 patients who met inclusion and exclusion criteria, 17 (19.3%) had at least one vitamin B12 level in 2016 versus 25 (28.4%) patients in 2017. The average number of vitamin B12 levels per patient was 1.07, with 51.1% of patients having no documented vitamin B12 levels since starting metformin. There were 3 incident diagnoses of anemia after patients started metformin therapy. Of the 88 patients, 17 were newly diagnosed with neuropathy or prescribed a medication for neuropathy without a vitamin B12 level in the previous year, or a vitamin low B12 level that was not supplemented with cyanocobalamin. Higher metformin doses and longer treatment duration were associated with lower vitamin B12 levels.

Conclusion: Vitamin B12 monitoring in this veteran population on long-term metformin therapy increased after the release of the 2017 American Diabetes Association Standards of Medical Care in Diabetes Guidelines. However, over 50% of the included patients never received a vitamin B12 level since starting metformin in 2014. The lack of vitamin B12 monitoring can increase risk of patients being mistreated for or misdiagnosed with diabetic neuropathy, as those symptoms can mimic vitamin B12 deficiency.
VIII A – CRITICAL CARE

PL VIII-1 EVALUATION OF ADHERENCE TO ANALGESIA AND SEDATION PROTOCOLS FOR MECHANICALLY VENTILATED ADULTS IN THE INTENSIVE CARE UNIT. Kelly Niemiec, Armando Garcia, Annie Oyanontaruk, Baptist Health System, San Antonio, Texas.

PURPOSE: To assess adherence to current analgesia and sedation protocols before and after nursing education at Mission Trial Baptist.

METHODS: Education was provided in July 2017. A retrospective evaluation was conducted of patients admitted between June 2017 and October 2017 that were 18 years or older and MV at least 12 hours. Data was collected on frequency of Richmond Agitation-Sedation Scale (RASS) assessments, titration of medications to achieve sedation goals, duration of MV, ICU length of stay, hospital length of stay, mortality, and selection of sedatives and analgesics.

RESULTS: A total of 45 patients, 26 in group one and 21 in group two, were assessed. The average number of RASS assessments per day was 3.6 in group 1 and 5.5 in group 2. In group one, 58% of RASS assessments achieved goal sedation of -1 to 0 compared to 67% in group two. The average duration of mechanical ventilation was 3.8 days in group one and 4 days in group two. The average length of stay was 5.3 vs 6.7 days in the ICU and 8 vs 9 days in the hospital for groups one and two, respectively. The rates of analgesic (30%) and sedative (70%) use were similar in both groups.

CONCLUSION: Education provided to nursing increased both the average number of RASS assessments per day and the percentage of assessments at goal sedation.

PL VIII-2 EVALUATION OF A PHARMACIST-DRIVEN 4TS HEPARIN-INDUCED THROMBOCYTOPENIA (HIT) RISK ASSESSMENT PROTOCOL. Sarah O’Rourke, Jacob Burnett, Karen Costiloe, Wyley McCoy, Amy Martin, CHRISTUS Trinity Mother Frances Health System, Tyler, TX.

PURPOSE: Guidelines recommend using the 4Ts clinical scoring system to estimate risk of true HIT. The 4Ts score is useful for ruling out patients with low risk of HIT. Literature suggests this tool is underutilized and providers may inappropriately order a platelet factor 4 (PF4) immunoassay or serotonin release assay (SRA) in patients with low risk of HIT. Furthermore, complete HIT workup, including turnaround time for PF4/SRA labs, may take several days. The objective of this study is to determine the impact of a pharmacist-driven 4Ts risk assessment protocol on median length of stay in patients with clinical suspicion of HIT.

METHODS: This study is a retrospective chart review. Patients ages 18 and older with clinical suspicion of HIT identified, and occurrence of major bleeding events. There were no significant differences regarding enoxaparin dose day mortality, resource utilization, turnaround time for labs, argatroban days of therapy, need for blood transfusion, and accuracy of heparin allergy in the patient’s chart.

RESULTS: An interim analysis was performed of 100 patients and found a median length of stay of 16.9 days in the control group (pre-4Ts protocol) and 10.6 days in the intervention group (post-4Ts protocol). The reduction in median length of stay in the intervention group was statistically significant (p = 0.0173).

CONCLUSION: Utilization of a pharmacist-driven 4Ts HIT risk assessment protocol is a valuable method to improve patient-centered outcomes including reduction in median length of stay.

PL VIII-3 EVALUATION OF ANTI-FACTOR XA (ANTI-XA) LEVELS TO ASSESS VTE PROPHYLAXIS DOSING OF ENOXAPARIN IN MORBIDLY OBESE PATIENTS: A RETROSPECTIVE SINGLE-CENTERED COHORT STUDY. Luis Ramirez, Merry Daniel, Lane Farrell, Michelle Strong, St. David’s South Austin Medical Center, Austin, TX.

PURPOSE: The purpose of this study is to determine if morbidly obese (BMI ≥ 40 kg/m²) trauma patients who receive a fixed high dose enoxaparin (defined as enoxaparin 40 mg every 12 hours) achieved appropriate anti-Xa levels for venous thromboembolism (VTE) prophylaxis compared to historical dosing of enoxaparin (defined as enoxaparin 30 mg every 12 hours) post implementation of a venous thromboembolism prophylaxis protocol.

METHODS: This was a retrospective, single-center cohort study. This study has been approved by the St. David’s Healthcare Institutional Review Board (IRB). Data was collected from the institution’s electronic records from January 1, 2017 to August 15, 2017 (pre-protocol) and August 16, 2017 to December 31, 2017 (post-protocol). Inclusion criteria were age ≥ 18 years of age, admission with trauma as a primary diagnosis to the shock trauma intensive care unit (STICU) or trauma care unit (TCU), body mass index (BMI) > 40 kg/m². Exclusion criteria included admitting diagnosis of VTE or required treatment doses of anticoagulation prior to admission, contraindication to enoxaparin or anticoagulation, renal insufficiency (defined as a CrCl < 30 mL/min), platelet count < 50,000 µL, pregnancy, hemodialysis, and lack of anti-Xa levels since admission. Primary outcome measured was achievement of appropriate anti-Xa levels associated with high dose enoxaparin compared with historical dosing. Secondary outcomes included incidence of VTE, day of hospital stay (if VTE was identified), enoxaparin dose adjustments, length of stay, and occurrence of major bleeding events.

RESULTS: A total of 26 patients met inclusion criteria: 17 in the pre-protocol group and 9 patients in the post-protocol group. Patients were predominantly male (59% vs 56%) with a median age of 52.5 years. No significant differences were found at baseline between groups. The primary outcome of interest were as follows in the pre-protocol group versus the post-protocol group: rates of goal anti-Xa levels achieved were 65% and 89% (p = 0.1860), respectively. There was no statistically significant differences seen in regards to incidence of VTE, days of hospital stay (if VTE was identified), and occurrence of major bleeding events. There were no significant differences regarding enoxaparin dose.
adjustments (12% v 0%, p = 0.5292) and length of stay (8 days vs 10 days, p = 0.5120) between the pre-protocol group and post-protocol group.

CONCLUSIONS: Based on the findings of this retrospective chart review, we found no statistical difference in the achievement of goal anti-Xa levels between patients receiving a fixed higher dose of enoxaparin (post-protocol) compared to historical dosing of enoxaparin (pre-protocol). Overall, there was trend toward patients achieving goal anti-Xa levels in the post-protocol group which had higher mg/kg dosing compared to patients in the pre-protocol group which had a lower mg/kg dosing. However, the study was underpowered and a larger study is warranted to validate the result.

PL VIII-4
RETROSPECTIVE EVALUATION OF THE INCIDENCE OF BLEEDING WITH HEPARIN USE AND ACT TARGET FOR OFF PUMP CABG. Lauren Olsen, Y-Nha Nguyen, Justin Gonzalez, Andrew Orsa, Valley Baptist Medical Center, Brownsville, TX.

PURPOSE: In high risk population, Off-Pump Coronary Artery Bypass Surgery (OPCAB) has been shown to decrease complications including atrial fibrillation, bleeding, systemic inflammation, and cerebral injury. Despite avoiding cardiopulmonary bypass, an increased pro-coagulant activity can occur postoperatively in patients undergoing OPCAB. Therefore, heparinization during OPCAB procedure is mandatory. However, excess anticoagulation perioperatively may increase bleeding risk and need of blood transfusion. To date, the optimal heparin dose and ACT target for OPCAB has not been established. The purpose of this study is to assess the optimal target range of ACT without increasing the risk of hemorrhagic complications in patients undergoing OPCAB.

METHODS: This is a retrospective study of adult patients who underwent OPCAB at our institution from September 2015 through February 2018. Data were collected from the hospital’s electronic records. Patients were excluded if they had a combination CABG and valve replacement procedure, pump-assisted procedure, history of coagulopathy (factor V Leiden mutation, G20210A mutation, antithrombin III deficiency, protein C and/or protein S deficiency, or Von Willebrand disease), was unable to receive blood transfusion (i.e. Jehovah’s witness), or missing record. The primary outcome was the incident of significant intra-operative bleeding. Significant intra-operative bleeding was defined as transfusion of more than 2 units of packed red blood cells, or transfusion of any amount of fresh frozen plasma, cryoprecipitate, platelets, or factor VII. Secondary outcomes included intra-operative mortality, post-operative mortality during hospital stay, intensive care unit length of stay (LOS), hospital LOS, and readmission to the operating room within 6 hours post-procedure.

RESULTS: Pending

CONCLUSION: Pending

PL VIII-5
EVALUATION OF THE USE OF INTRAVENOUS HYDROCORTISONE, THIAMINE, AND ASCORBIC ACID IN SEVERE SEPSIS AND SEPTIC SHOCK PATIENTS IN INTENSIVE CARE UNITS. Brittany Parker, Van Ngo, Margarita Taburyanskaya, Michael Olmos, Meagan Johns, Texas Health Harris Methodist Fort Worth, Fort Worth, Texas.

PURPOSE: The Surviving Sepsis Campaign recommends the use of intravenous corticosteroids in the setting of septic shock to decrease vasopressor requirements. A recently published study by Marik et al. suggests that the addition of intravenous ascorbic acid and thiamine to the standard of care may have synergistic effects on mortality reduction in septic shock. The purpose of this study was to assess the impact of this combination therapy on clinical outcomes in patients diagnosed with severe sepsis or septic shock admitted to the intensive care unit (ICU) at a tertiary community hospital.

METHODS: This study was submitted and approved by the Texas Health Resources Institutional Review Board, IRB# 1115306-2. This is a retrospective chart review of patients who received intravenous hydrocortisone, thiamine, and ascorbic acid therapy (HTAA) versus hydrocortisone alone from March 1, 2016 to March 31, 2018. Adult, non-incarcerated, non-pregnant patients who were diagnosed with ICD-9/10 codes for severe sepsis or septic shock and admitted to an intensive care unit were included in the analysis. Data was collected after implementation of the Surviving Sepsis Campaign guidelines.

RESULTS: To date, 65 patients who received HTAA have been analyzed. Of these, 59 patients were diagnosed with septic shock and 6 patients were diagnosed with severe sepsis. The observed mortality across all groups was 13.9%. The observed mortality of patients diagnosed with septic shock was 15.3%. No patients diagnosed with severe sepsis died. The median ICU length of stay was 5.0 days for septic shock and 3.4 days for severe sepsis. The median hospital length of stay was 12.2 days for septic shock and 9.3 days for severe sepsis. A total of 39 (66.1%) septic shock patients and 2 (33.3%) severe sepsis patients were on ventilator support for a median of 5.0 days and 3.0 days, respectively. A total of 58 (98.3%) septic shock patients and 4 (66.7%) severe sepsis patients were on vasopressors for a median duration of 55.4 hours and 67.5 hours, respectively.

CONCLUSION: Data collection remains in progress; however, current data suggests that the addition of intravenous ascorbic acid and thiamine to the standard of care in severe sepsis and septic shock may portend a reduction in mortality. Further analysis is necessary to confirm the preliminary observations.
PL VIII-6
CLINICAL UTILIZATION OF PROTON PUMP INHIBITORS (PPIs) AND HISTAMINE-2 RECEPTOR ANTAGONISTS (H2RAs) IN STRESS ULCER PROPHYLAXIS (SUP) IN CRITICALLY ILL PATIENTS AT A LARGE ACADEMIC MEDICAL CENTER. Marilyn L. Mootz, Belen A. Tilahun, Christine Parker, Latresa K. Billings, Corey D. Kershaw, University of Texas Southwestern Medical Center, Dallas, TX.

PURPOSE: To quantify and evaluate the clinical utilization of PPIs and H2RAs for stress ulcer prophylaxis within the medical intensive care unit (MICU) and surgical intensive care unit (SICU) at University of Texas Southwestern Medical Center (UTSW) William P. Clements Jr. University Hospital. To quantify associated therapy cost within a large tertiary academic medical center.

METHODS: Using data retrospectively collected from the electronic medical record, we identified all patients who received a PPI or H2RA and were admitted to the MICU or SICU between January 1, 2017 and June 30, 2017. Baseline demographics collected include patient age, sex, hospital length of stay, duration of PPI or H2RA therapy and concomitant medications. Patients on PPI continuous infusions, solid organ and bone marrow transplant patients, and oncology patients were excluded from the study. The rate of adherence to guidelines was quantified and evaluated within the entire cohort, in the MICU and SICU. Adherence to guideline use of stress ulcer prophylaxis was further stratified by agent and patient diagnosis. The adverse events of drug treatment were quantified.

RESULTS: The rate of appropriate use of stress ulcer prophylaxis were found to be 34.48%. When prior to admission PPI and H2RA therapies were included in the analysis, the rate of appropriate prescribing for PPIs and H2RAs increased by 39.81%. Patients treated in the MICU were more likely to receive guideline-based therapy when prior to admission medications were not considered (82.3% vs. 21.0%, p<0.001). Between the MICU and SICU, there is a statistically-significant difference in rates of adherence to guidelines with and without prior to admission medications included (p<0.001 and p=0.0024, respectively). Cost implications have yet to be evaluated.

CONCLUSION: This study quantifies appropriate utilization of PPIs and H2RAs in the ICU and provides evidence for evaluating prescribing practices within all ICU settings at one academic medical center. Rates of adherence to guideline-based therapy in this study are consistent with previously-published studies, with about two-thirds of patients receiving unnecessary stress ulcer prophylaxis when only guideline recommendations are considered. Future studies should be designed to include multiple institutions and a larger patient population. Stress ulcer prophylaxis guideline-based drug administration should be reinforced, while considering patient-specific factors.

PL VIII-7
AN EVALUATION OF INTRAVENOUS TO ORAL DILTIAZEM CONVERSION IN INTENSIVE CARE UNIT PATIENTS WITH ATRIAL FIBRILLATION AT A COUNTY TERTIARY TEACHING HOSPITAL. Bethannie D. Dziuk, Benjamin A. Dagradet, Charles F. Seifert, Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

PURPOSE: To determine what percentage of patients admitted to an intensive care unit at University Medical Center Health Systems are converted to appropriate oral therapy after administration of intravenous diltiazem infusion.

METHODS: A retrospective chart review was conducted using the institution’s electronic medical records from September 2011 – September 2017. We identified patients who were diagnosed with atrial fibrillation with rapid ventricular rate and started on diltiazem + NS IV 5 mL/hr [5 mg/hr]. Individual patient medical administration records were then searched to determine what oral medication was initiated after the intravenous diltiazem infusion was discontinued in order to maintain heart rate.

RESULTS: An analysis of 100 patients meeting the study’s inclusion and exclusion criteria will be conducted to determine what percentage of patients were converted to an appropriate oral medication post atrial fibrillation with rapid ventricular response. The final results of the study are pending statistical analysis.

CONCLUSION: Preliminary data can help identify prescribing patterns within the institution surrounding the use of intravenous diltiazem infusion and, subsequently, aid in establishing an appropriate long-term, oral conversion in order to maintain heart rate control.

VIIB – CRITICAL CARE

PL VIII-8
EVALUATION OF THE EFFICACY OF VITAMIN K IN BLEEDING PATIENTS WITH LIVER DISEASE. Makenna Smack, Julin Mathew, Vy Pham, Anh Vu, Memorial Hermann System, Houston, TX.

PURPOSE: The liver holds a key role in the synthesis and activation of coagulation factors. Chronic liver disease can result in decreased synthesis of pro-coagulant factors. Vitamin K is central to the liver’s ability to activate certain coagulation factors. Patients with decompensated liver disease may develop vitamin K deficiency due to various mechanisms. The purpose of this study was to evaluate the safety and efficacy of vitamin K administration in bleeding patients with liver disease.

METHODS: Patients ≥ 18 years old were included in this retrospective cohort analysis if they had a documented bleeding event and liver disease for which they received at least one blood product or dose of vitamin K within 24 hours of admission. Patients with a history of warfarin use, other anticoagulant use, or liver transplant were excluded from this analysis. The primary endpoint of this study was the total number of blood products administered.

RESULTS: A total of 300 patients admitted to three community hospitals, between September 2015 to September 2017, were included in this analysis. The most
common etiology of liver disease was cirrhosis. The majority of patients presented with esophageal varices or gastrointestinal hemorrhage. The total blood product usage was higher in patients who received vitamin K compared to those who did not receive vitamin K (p <0.0001). Patients treated with vitamin K received a median of 3 doses during admission. Patients who received vitamin K had a higher median model for end-stage liver disease (MELD) score and baseline INR and a longer length of stay. Additionally, these patients were more likely to receive fresh frozen plasma transfusions. In hospital, all-cause mortality was higher for patients who received vitamin K compared to those who did not receive vitamin K. 

CONCLUSION: The use of vitamin K did not reduce the number of blood products administered to bleeding patients with liver disease.

PL VIII-9
EVALUATION OF OPEN FRACTURE ANTIBiotic PROPHYLAXIS AND INCIDENCE OF SURGICAL SITE INFECTIONS IN ADULT TRAUMA PATIENTS.
Rosanna Dastoori, Logan Thibodeaux, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

PURPOSE: To recognize prescribing practices and any barriers to best practices and to examine the antibiotic utilization at Our Lady of the Lake Regional Medical Center after an educational intervention to physician and pharmacy teams.

METHODS: Data was retrospectively compared using prescribing practices of patients four months before versus four months after the educational intervention. The primary outcome is to determine rate of surgical site infection. Secondary outcomes include time to antibiotic administration, duration of therapy and appropriate gram coverage based on fracture type as well as rate of adverse drug reactions.

RESULTS: 42 patients were included in the pre-intervention analysis and 50 patients were included in the post-intervention analysis. In the pre-intervention phase, appropriate coverage was administered in 85% of patients (n=42). The average duration of antibiotic therapy was 53 hours. The incidence of skin and soft tissue infection was 5% and no adverse drug reactions were documented. Analysis in process, final data to be presented.

CONCLUSION: Based on the preliminary data, there is room for improvement in prescribing practices of antibiotic prophylaxis in adult open fracture patients based on current guideline recommendations.

PL VIII-10
RETROSPECTIVE REVIEW OF INTRAPLEURAL ADMINISTRATION OF TPA/DNase. Holly Carmody, Jennifer Roth, Eitan Podgaetz, Sasha Still, Baylor University Medical Center, Dallas, Texas.

PURPOSE: The use of intrapleural tissue plasminogen activator (tPA)/deoxyribonuclease (DNase) has been shown to reduce the frequency of failed drainage and need for subsequent surgery in observational studies for complicated pleural effusions. However, standardized use of these agents have yet to be definitively established. This study assesses the efficacy of intrapleural tPA/DNase use by evaluating the success rate in clearance of effusion. The findings of this study will be extrapolated to aid in streamlining the appropriate use of intrapleural tPA/DNase in an effort to ensure clinical efficacy, minimal patient harm, as well as optimal use of hospital resources.

METHODS: This study is Institutional Review Board approval. Retrospective chart review has been conducted for patients 18 years and older at Baylor University Medical Center, Dallas, TX, who received intrapleural tPA/DNase. The primary objectives of the study look to assess the efficacy of intrapleural tPA/DNase use as determined by clearance of pleural effusion. Secondary endpoints include pleural effusion drainage after administration of each dose, clinical impression of chest tomography radiography if obtained post medication administration, and subsequent referral for surgery. In addition to these markers, dose and duration of tPA/DNase, clinically significant bleeding events defined as those causing hemodynamic instability or requiring transfusion, length of hospital stay, and inpatient mortality will also be evaluated. Baseline demographics include age, gender, type of effusion, dose and duration of tPA/DNase received, and chest tube placement and type. Summary statistics are reported with the appropriate measures of central tendency. Appropriate parametric tests or non-parametric equivalent tests are used. A P-value of less than 0.05 indicates a statistically significant difference.

RESULTS: N/A, in progress

CONCLUSION: N/A, in progress

PL VIII-11
THE IMPACT OF A PHARMACIST-DRIVEN PROPOFOL TRIGLYCERIDE MONITORING PROGRAM IN AN ICU. Jacquelyn Glockner, Young Ran Lee, Hendrick Medical Center, Abilene TX.

Purpose: To investigate the impact of a pharmacist-driven propofol and triglyceride monitoring program and factors that may predispose a patient to development of hypertriglyceridemia while on propofol in an ICU. Propofol is one of the sedatives of choice in the Intensive Care Unit (ICU) settings due to its short half-life and ease of titration. However in ICU patients, propofol-induced hypertriglyceridemia may complicate a hospital stay and predispose a patient to developing acute-pancreatitis.

Methods: It is a retrospective, single-center, cohort study conducted in Intensive Care Unit (ICU) patients on propofol. Patients receiving propofol will be identified by the laboratory and their electronic medical record. Prisoners, pregnant females, age less than 18 years and greater than 89, and those not admitted to the ICU will be excluded. Patients will be assigned to either the high-dose propofol or low-dose propofol group based on their propofol dose and the criteria
defined in a pharmacist-driven propofol monitoring protocol at a community hospital. The primary outcome is the presence of hypertriglyceridemia (triglycerides $\geq 400 \text{mg/dL}$). Secondary outcomes include the association of hypertriglyceridemia with potential risk factors including patient demographics, nutrition, medications, comorbidities, and diagnostic codes. Data collection includes demographic information, baseline characteristics, comorbidities, diagnostic codes, laboratory values including triglycerides, medications, duration of treatment, and nutrition source(s). Nominal data will be analyzed by chi-square or Fisher’s exact test and secondary outcomes will be analyzed by multivariate regression.

**Results:** N/A  
**Conclusions:** N/A

**PL VIII-12**  
**SURVEILLANCE ULTRASOUND IN THE NEURO INTENSIVE CARE UNIT: TIME TO DEEP VEIN THROMBOSIS DIAGNOSIS.** Kristi L. Hargrove, Colleen Barthol, Stefan Allen, Crystal Franco-Martinez, 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 value of routine surveillance ultrasound in early diagnosis of deep vein thrombosis (DVT) in Neuro Intensive Care Unit (ICU) patients at University Hospital. Routine screening ultrasounds are commonly performed in Neuro ICU patients who have been in the hospital for greater than five days. This practice is aimed at early detection and anticoagulant initiation with subsequent prevention of pulmonary embolism (PE) and complications. However, initiating anticoagulation for the treatment of asymptomatic DVTs may put patients at higher risk of bleeding, especially in those who were admitted due to hemorrhagic events.

**METHODS:** Retrospective chart review of patients diagnosed with DVT during admission to the Neuro ICU at University Hospital from January 1, 2012 through December 31, 2017. Patients were identified through ICD9 and ICD10 codes for DVT and PE, then screened for study inclusion criteria. Patients were assigned to symptom-based ultrasound (control group) vs surveillance ultrasound. The primary outcome was time from admit to DVT diagnosis (in hours). Secondary safety outcomes included discontinuation of DVT treatment secondary to suspected hemorrhage or new/expanding hemorrhage on follow-up computed tomography (CT) of the head.

**RESULTS:** 116 patients were identified and 50 were included in the overall analysis of venous thromboembolism. Of these 50 patients, 23 were determined to be in the control group and 27 in the surveillance group. A total of seven patients (control = 4 and surveillance = 3) were found to have a PE without DVT and were excluded from the primary outcome analysis. The primary outcome of time to DVT diagnosis was not significantly different with a median time of 172 hours in the control group vs 148 hours in the surveillance group (p = 0.2). There was no difference in discontinuation of anticoagulation therapy between groups, with a discontinuation rate of 21.7% (5/23) in the control group vs 11.1% (3/27) in the surveillance group (p = 0.4). Of the 27 patients with follow-up head CT, two patients in the control group and two patients in the surveillance group showed a new or expanding hemorrhage. Follow-up head CT was not performed in all patients especially those who were not initiated on anticoagulation.

**CONCLUSION:** Routine surveillance ultrasound did not lead to earlier diagnosis of DVT in this study. Safety outcomes of bleeding events were not different between groups when comparing discontinuation of treatment or documented new or expanding hemorrhage on follow-up head CT. Utility of surveillance ultrasound in this population should continue to be evaluated in large, prospective trials before routine use can be recommended.

**PL VIII-13**  
**COMPARATIVE SAFETY AND EFFICACY OF CONTINUOUS INFUSION AND INTERMITTENT BOLUS NEOSTIGMINE FOR ACUTE COLONIC PSEUDO-OBSTRUCTION.** Lucas W. Smedley, Dana G. Boeck, Colleen A. Barthol, G. Christina Gutierrez, University Health System, University of Texas at Austin College of Pharmacy, University of Texas Health Science Center at San Antonio, San Antonio, TX.

**PURPOSE:** To compare initial clinical response of intermittent bolus versus continuous infusion neostigmine for acute colonic pseudo-obstruction (ACPO). ACPO occurs due to a reduction in parasympathetic activity in the colon. Neostigmine is an acetylcholinesterase inhibitor which increases smooth muscle contraction frequency by raising acetylcholine concentrations at autonomic nervous system synapses. Neostigmine has been studied for treatment of ACPO as an intermittent bolus and as a continuous infusion, but the two modalities have never been compared.

**METHODS:** This single-center, retrospective chart review compared intermittent bolus versus continuous infusion neostigmine for ACPO at University Hospital between January 1, 2006 and August 31, 2017. A query of pharmacy charges for neostigmine was used to identify patients and data points were collected from the electronic medical record. The primary outcome was initial clinical response, defined as bowel movement within 4 hours of a bolus dose or 24 hours of initiation of a continuous infusion. Secondary outcomes included time to bowel movement, number of patients with reduction in bowel diameter at 24 hours, need for additional courses of neostigmine therapy or colonic decompression/surgical intervention, and incidence of bradycardia.

**RESULTS:** A total of 75 patients were included in the study, 37 in the bolus group and 38 in the continuous infusion group. Baseline characteristics were similar between groups. Mean total neostigmine dose received in the first 24 hours was 2.6 $\pm$ 1.9 mg in the bolus group and 8.9 $\pm$ 3.0 mg in the continuous infusion group. Rates of initial clinical response were similar in the bolus (62.2%) and continuous infusion groups (81.6%) (p = 0.06). Patients in the bolus group were less likely to have a reduction in bowel diameter on imaging (34.9% vs 65.1%, p = 0.004). Patients in the bolus group had a shorter time to bowel movement compared to the continuous infusion group (1.4 hrs vs. 3.5 hrs, p = 0.0478), but were more likely to require nasogastric decompression after therapy (67.6% vs 39.5%, p = 0.0148). Intensive care unit length of stay, hospital length of stay, and in-hospital mortality did not differ between groups. No differences in number of patients requiring a second course of therapy or surgical intervention were identified. Patients in the bolus group were less likely to experience bradycardia (13.5% vs 39.5%, p = 0.011), however there was no
difference in the number of patients who required atropine (10.8% vs 5.26%, p = 0.43).

CONCLUSION: Initial clinical response following an intermittent bolus of neostigmine was similar to that of continuous infusion, with a shorter time to bowel movement. Patients who received continuous infusion had a greater incidence of decreased bowel diameter but higher rates of bradycardia.

VIIIIC – HEALTH-SYSTEM PHARMACY ADMINISTRATION & MANAGEMENT

PL VIII-14
EMPLOYER AND STUDENT PERCEPTIONS OF ESSENTIAL QUALITIES AND SKILLS IN NEW PHARM.D. GRADUATES ENTERING THE WORKFORCE. Stanley A. Luc1, Krystal K. Haase1, Krystal L. Edwards2, Kenna D. Payne1, Eric J. MacLaughlin1, Texas Tech University Health Sciences Center (TTUHSC) School of Pharmacy (SOP), Amarillo1 and Dallas2, TX.

BACKGROUND: Given the national increased supply of pharmacists and decreasing demand, new graduates need to be ready to enter an increasingly competitive job market. Applied “soft skills” are recognized as critical attributes in the workforce. While limited data are available on employer perceptions of the importance of soft skills in potential pharmacist-employees, student knowledge and impressions of the importance of these skills are not known.

PURPOSE: To characterize and compare pharmacy student and employer perceptions of the essential qualities and skills of new graduates for obtaining an entry-level pharmacist position. The study also explores student- and setting-specific factors that affect these perceptions.

METHODS: Employers were identified from an existing database of career fair participants, non-faculty preceptors, and alumni. Employers were contacted in person, when feasible, to complete an anonymous paper survey. Additional survey requests will be distributed by email with a link to an identical Qualtrics® electronic survey. P1-P4 students at the Texas Tech University Health Sciences Center will also be contacted by email to the same survey electronically. Participants will be asked to rate and rank ten employer perceptions of the essential qualities and skills of new graduates according to Accreditation Council for Pharmacy Education Standards. Scaled ratings will be evaluated using Mann-Whitney-U and Kendall rank correlation will be used to determine similarity of rank lists. Ranking data will be assessed through proportional frequency and proportional ranking-dependent (weighted) frequency calculation. Relationships between rankings will be evaluated through multivariate analyses.

RESULTS: Preliminary data for initial employer respondents (n=7) indicated most participants (71%) were based in the community setting, and 57% were responsible for hiring staff pharmacists. For educational outcomes, 86% of participants rated communication and professionalism as absolutely essential whereas none rated innovation and entrepreneurship as absolutely essential. By proportional frequency, the highest ranking essential elements were communication (24%), leadership (19%), and professionalism (14%).

CONCLUSION: To be presented based on completed data analysis.

PL VIII-15
OPTIMIZATION OF THE MEDICATION-USE PROCESS IN A VETERANS AFFAIRS ACADEMIC TEACHING HOSPITAL TO PREVENT MEDICAL SUPPLY PRESCRIPTION ERRORS. Alan P. Moyer, Christina E. Pereira, Regina Issac, Michael E. DeBakey VA Medical Center, Houston, TX.

PURPOSE: Medication safety is priority in healthcare systems across the country. Selecting the correct ostomy supplies can be complex when determining the best product for the patient. The primary objective is to consolidate resources to decrease waste and avoid prescribing errors and shorten the time to complete prior authorization requests. The secondary objective is to streamline operations and reduce wait time for patients to obtain their supplies.

METHODS: An interdisciplinary Ostomy Supply Task Force was established to eliminate all non-value-added time when ordering ostomy supplies in the electronic medical record. A fishbone diagram was created to determine root causes to eliminate waste and improve patient care. A retrospective usage report identified dispensing habits for 113 orderable ostomy pouches (54 ConvaTec, 46 Hollister, 11 Coloplast, 2 CYMED) at the Michael E. DeBakey Veterans Affairs Medical Center from March to July 2017. Each supply item was analyzed for quantity dispensed, price per unit, and whether the prescription was filled locally or at the Consolidated Mail Outpatient Pharmacy (CMOP). The pharmacy inventory was surveyed and unused supplies was removed from stock. Data was recorded without patient identifiers and confidentially was maintained.

RESULTS: The average wait time for patients to receive their ostomy supplies from CMOP is between 4 to 7 days. If the item is unavailable, on average, the patient can wait an additional 3 to 5 days since the pharmacy will need to order the supply from the manufacturer and fill it locally. To help consolidate inventory and decrease patient wait times, 64% of the Coloplast orderable items were removed from the electronic health record, compared to 62% of Hollister and 48% of ConvaTec supplies. All of the CYMED pouches were removed from the inventory as well. Of the orderable items removed from the electronic health record, 100% of the Coloplast and CYMED pouches were unavailable at CMOP, followed by ConvaTec and Hollister (68% and 38% respectively).

CONCLUSION: Based on our preliminary results, by converting patients’ ostomy pouches, this will potentially reduce patient wait times, decrease waste, and increase utilization of our mail out pharmacy.
VALUE OF IMPLEMENTING A CEFAZOLIN INTRAVENOUS PUSH PROGRAM IN A SURGICAL SETTING. Illiana Rangel, Shreya Parekh, Rodney Cox, Memorial Hermann Memorial City Medical Center-Houston, Texas.

Purpose: Cefazolin is a commonly used antibiotic in the surgical setting. Surgical areas such as orthopedics are resource intensive and require efficiency due to a high volume of cases and quick turnover rates. The Lean methodology was developed in the manufacturing industry to increase efficiency by eliminating the nonvalue added steps in a process, promoting flow, and continuously working to improve processes. Currently at our facility, cefazolin is prepared and dispensed daily as an intravenous (IV) piggy back, infused over thirty minutes, and is required to be initiated within one hour prior to incision time. Current literature supports the safety and efficacy of administering beta-lactam antibiotics such as cefazolin as an IV push over three to five minutes. However, there is limited literature addressing the value of implementing an IV push program in the surgical setting. This is a process improvement project aimed to analyze the value of implementing a cefazolin IV push in comparison to IV infusion at Memorial Hermann. The secondary objective of this study is to identify the barriers associated with implementing this program.

Methods: A cefazolin IV push program will be piloted in the orthopedic service line at Memorial Hermann Memorial City Medical Center in Houston, Texas. This pilot will target the cefazolin 1, 2, 3 gram doses for all adult patients. Pediatric patients are excluded from this study. The primary objective of this study was to utilize the Lean methodology to identify gaps in processes for antibiotic administration that could be improved. Pre-data was collected from September 1st to October 1st and included-total number of cefazolin 2 gram pre-mixed bags and 1 gram vials dispensed, number of cefazolin 2 gram pre-mixed bags wasted due to expiration, time in motion from medication retrieval to end of infusion, and adverse events associated with administering cefazolin via IV piggy back. Post data was collected between October 26th and November 26th and included-total number of cefazolin 1 gram vials dispensed, vials removed from Pyxis due to expiration, time in motion from medication retrieval to end of push, and adverse associated with administering cefazolin via IV push. A cumulative price per dose will be calculated for both methods of administration in terms of labor, drug cost and supplies. Total value will be calculated, and is defined as outcomes divided by cost. Outcomes are calculated by administration time and adverse events, and cost is calculated in terms of supplies, waste, and drug cost

Results:

Pre-implementation data
From September 1st to October 1st, 345 bags of premixed cefazolin 2 gram and 490 vials of cefazolin 1 gram were dispensed and 53 pre-mixed bags of cefazolin 2 gram were wasted due to expiration. A time in motion was conducted on the administration of an IV piggy bag beginning with medication retrieval and ending after infusion, and totaled to 38 minutes. No adverse events were reported using IV piggy back administration method.

Post-implementation data
From October 26th to November 26th, 1,322-1 gram vials were dispensed and no vials were removed due to expiration.

A time in motion was conducted on the administration of an IV push beginning with medication retrieval and ending with the administration of the antibiotic, and totaled to 13 minutes. No adverse events were reported using the IV push administration method. Cumulative price per dose for cefazolin 2 gram IV push was $3.02 and for cefazolin 2 gm IV infusion it was $8.49. Value of cefazolin administered as IV Infusion was 0.08 and value of cefazolin administered as IV push was 4.

Conclusion:
Incorporating the Lean philosophy in our surgical service lines provided efficiency in our medication administration process, promoted flow, and reduced waste. IV push provided a greater value in comparison to IV piggy back for our institution and our patients. Benefits included a reduction in medication administration time, wasted medication, and production costs. As a health system we have chosen to expand the list of beta-lactam antibiotics that may be administered via IV push.

EVALUATING THE BENEFITS OF IMPLEMENTING MAIL ORDER PHARMACY SERVICES AT A COMMUNITY HEALTH SYSTEM: A RETROSPECTIVE REVIEW. Elizabeth Villanueva, Shawn Gauthreaux, Mabel Adamaley-Johnson, Allyson Duong, Harris Health System, Houston, TX.

PURPOSE: Harris Health System has 15 outpatient pharmacies that dispense 2.2 million prescriptions yearly. Last year, we evaluated the feasibility of providing a mail order service to our patients of which 82.3% expressed interest. In June 2017, we implemented the program in two outpatient pharmacies and expanded to the remaining pharmacies in late December 2017. The purpose of this study is to evaluate the value of the mail order pharmacy service in a community-owned healthcare system.

METHODS: This is a multicenter retrospective study evaluating the mail order pharmacy services of Baytown and Gulfgate outpatient pharmacies. Epic Willow was utilized to obtain the email addresses of all the patients who used the mail order service at least once since the implementation. An electronic questionnaire was sent to these patients to determine their satisfaction. Patient satisfaction scores and wait times for both pharmacies were collected for years 2016 and 2017, from July to December. Primary endpoints compared the patient satisfaction scores and wait times at the two pharmacies.

RESULTS: Out of 261 users, 128 responded to the electronic survey. There were 119 individuals who said they used the mail order service, of which 96 stated that they feel this service has improved their adherence. The majority of mail order respondents on the electronic questionnaire were very satisfied. Overall, 2,309 individuals from the Gulfgate and 1,193 individuals from the Baytown pharmacy responded to the patient satisfaction survey. The mean patient satisfaction score in both pharmacies increased from 2016 to 2017 for Baytown (82.5% vs. 92.9%, respectively; p < 0.001) and for Gulfgate (77.8% vs. 86.2%, respectively; p = 0.039). Both pharmacies showed a slight decrease in observed wait times from 2016 to 2017 for Baytown (26.67 minutes vs. 16.33 minutes, respectively; p = 0.145) and for Gulfgate (14.33 minutes vs. 13.17 minutes, respectively; p = 0.715).
CONCLUSIONS: Based on questionnaire results, patients have been positively impacted by this service. This study found that patient satisfaction scores improved and wait times decreased however, only the improvement in patient satisfaction scores was found to be statistically significant. Further studies with more controlled analysis should be done to determine if changes in patient satisfaction scores and wait times may be attributed to the introduction of mail order.

PL VIII-18
CLINICAL PHARMACY FROM THE PERSPECTIVE OF THE PHARMACIST. Arika Mike, Delaney Ivy, Charlotte Farris, Sandy Diec, Esther Yi, Baylor Health Enterprises, Temple, TX.

PURPOSE: In 2008, the American College of Clinical Pharmacy developed an unabridged definition of clinical pharmacy. This document made statements about the discipline of clinical pharmacy as well as the role of the clinical pharmacist. The purpose of this study is to identify pharmacist perceptions on clinical pharmacy and to determine if pharmacists agree with statements from the definition put forth by the American College of Clinical Pharmacy. Additionally, this study seeks to discern the perceived duties of a clinical pharmacist and to summarize the barriers pharmacists identify to practicing clinical pharmacy.

METHODS: An electronic questionnaire was developed and distributed to practicing pharmacists. A cover letter detailing the purpose of the study as well as the voluntary nature of the study was given to all participants with a link to the questionnaire embedded. Professional organization forums, newsletters, alma maters and social media were the primary methods of distribution. The questionnaire utilized rank order, Likert Scale and open-ended type questions. Additionally, demographic data collected included age, sex, current practice setting, current role in practice, current practice location, pharmacy education, pharmacy credentials and certifications, college of pharmacy and year of graduation, as well as professional organization membership.

RESULTS: Distribution of the questionnaire began January 5, 2018 and preliminary results were collected after 6 weeks. A total of 90 responses were collected for analysis. When asked their level of agreement on definitions of a clinical pharmacist from the American College of Clinical Pharmacy: 90.6% participants selected strongly agree or agree for each on average, while 6.8% of participants selected neither agree nor disagree for each on average. The majority of participants agreed with statements from the American College of Clinical Pharmacy definition. Top barriers identified were related to time, funding and support. While top duties were related to healthcare provider interactions, education as well as reviewing and monitoring medications. These preliminary findings help to highlight perceptions of clinical pharmacy and the role of a clinical pharmacist identified by participants.

PL VIII-19 - OPEN

IXA – EMERGENCY MEDICINE

PL IX-1
TIME TO FIRST DOSE ANTIBIOTIC ADMINISTRATION FROM ORDER PLACEMENT IN SEVERE SEPSIS AND SEPTIC SHOCK ADMITTED TO THE EMERGENCY DEPARTMENT. Emily Johnston, Britney Ross, Xuan Ge, Joel Mosley. Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

Purpose: Over one million people develop sepsis each year in the United States with around 250,000 cases resulting in death. Timely recognition and treatment of sepsis is crucial in improving patient outcomes and decreasing mortality rates. The Surviving Sepsis Campaign recommends broad-spectrum antibiotic administration within one hour of recognition of severe sepsis or septic shock. Observational studies have shown an increase in poor outcomes with hourly delays in antibiotic administration. The goal of this quality improvement project is to ensure efficient patient care to those with severe sepsis and septic shock through staff education and operational intervention to effectively deliver antibiotics.

Methods: This study is a single-center, pre- and post-intervention, retrospective chart-review to observe changes in time to administration of antibiotics in patients with sepsis and septic shock in the Emergency Department (ED) at Our Lady of the Lake Regional Medical Center (OLOLRCM). Patients will be included if they are eighteen years or older and receive intravenous antibiotics for the diagnosis of sepsis or septic shock in the ED. The proposed design will include a four-month retrospective chart review from December 2017 to January 2018 followed by an educational intervention presentation for staff members. A two-month follow-up will be conducted to compare data pre- and post-intervention. The primary outcome is to determine the time to administration of first-dose intravenous antibiotics from the time it is ordered by a physician. Secondary outcomes are to determine antibiotic time to administration and patient outcomes, reasons for delay of antibiotic administration, and workflow processes to decrease time to administration of antibiotics.

Results: Of the 242 patients reviewed, 21 patients were included with the diagnosis of severe sepsis or septic shock. Six of twenty-one patients (28%) experienced a greater than sixty minute delay. This time was measured order entry time to administration time. From this subset of patients, all first doses of antibiotics were compounded in central pharmacy. Other identified issues included insufficient documentation
of weight and allergies, drug shortages, and issues with medications stocked in the emergency department pharmacy. Final analysis is in process, and final data will be presented.

Conclusion: Based on preliminary data, a need for intervention is required to reduce the overall time to administration of antibiotics in the emergency department.

PL IX-2
ASSESSING OUTCOMES OF SEPTIC PATIENTS TRANSITIONING FROM EMERGENCY DEPARTMENT. Kevin Lei, Lucretia Davis, Gregory Laine, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: To evaluate the impact of emergency department (ED) disposition and handoff time on compliance with the three- and six-hour bundles and effects on length of stay and in-hospital mortality at a large academic medical center.

METHODS: Retrospective data was collected from electronic medical records of 100 patients admitted through and met criteria for severe sepsis in the ED of a quaternary teaching institution between August 1, 2016 and July 31, 2017. A chi-squared analysis was performed to assess proportions of patients who completed sepsis bundles and two sample t-test was performed to analyze the length of stay.

RESULTS: Of the 100 patients evaluated, 33 patients had an ED disposition of <2 hours (early disposition), and 67 had an ED disposition of ≥2 hours (late disposition). Three-hour bundle compliance for the early disposition group and late disposition group were 42.4% (n=14) and 56.7% (n=38) respectively (p=0.258). Twenty-eight patients with early disposition (84.8%) and 65 patients with late disposition (97.0%) met criteria for administering broad spectrum antibiotics (p=0.0679). Compliance for obtaining lactate levels, obtaining cultures prior to antibiotics, and fluid resuscitation were numerically similar and not statistically significant between the two groups. Fluid administration was the lowest in both groups at 60.6% in patients in early disposition and 59.7% in patients with late disposition (p=0.9308). Disposition time and bundle compliance did not result in statistically significant differences in length of stay (emergency department, ICU, and total). Three-hour bundle compliance was not associated with statistically different length of stays (emergency department, ICU, and total). However, it was found that mortality was higher in patients who did not complete the three-hour bundle in a timely manner compared to those that did (16.7%, n=8 vs 5.8%, n=3, p=0.009).

CONCLUSION: Based on this analysis, early ED disposition was associated with a lower three-hour bundle compliance rate but results were not statistically significant. Lack of three-hour bundle compliance was associated with higher mortality.

PL IX-3
PRESCRIBING PATTERNS FOR THE OUTPATIENT TREATMENT OF URINARY TRACT INFECTIONS IN PATIENTS DISCHARGED FROM THE EMERGENCY DEPARTMENT. Erin Moody, Chase Waxler, Memorial Hermann Southwest Hospital – Houston, TX.

PURPOSE: Describe the current prescribing patterns for the outpatient treatment of urinary tract infections (UTI) in patients discharged from a high volume community hospital emergency department (ED) and identify potential areas of opportunity for outpatient antimicrobial stewardship.

METHODS: Patients discharged from the ED with finalized urine cultures between January and December of 2017 were randomized in order to obtain a sample of 500 patients. Adult patients (≥18 years of age) were included if they received antibiotics for the treatment of UTI, pyelonephritis, or asymptomatic bacteriuria (ASB). Patient demographics, diagnosis, urinalysis composition, microbiology, clinical presentation, and prescription data were all obtained retrospectively from the electronic medical record.

RESULTS: Overall, 1,052 patients were reviewed for inclusion; 104 were excluded as they were less than 18 years of age and 444 were excluded because they didn’t receive antibiotics at discharge leaving 500 patients for evaluation. The majority of patients were female (88.6%) with an average age of 42.7 years. Pregnancy at the time of diagnosis was documented in 12.6% of patients. UTI was diagnosed in 88.2% of patients, followed by pyelonephritis (10.8%) and ASB (1%). Specific clinical signs and symptoms were documented in 47.4% of patients. The majority of samples (99.4%) were collected via midstream clean catch; epithelial contamination occurred in 76.4% of urinalyses obtained. E. coli (52.6%) was the most commonly isolated pathogen followed by Enterococcus spp. (14.4%) and Proteus spp. (7.6%). Cephalosporins (41.6%) accounted for the most commonly prescribed antibiotic followed by fluoroquinolones (27.8%) and nitrofurantoin (20.8%). The average duration of treatment for UTI, pyelonephritis, and ASB was 7.7 days, 9.7 days, and 7 days respectively.

CONCLUSION: The findings of this study identified several areas of opportunity to improve outpatient antimicrobial stewardship, indication for urinalysis, appropriate midstream clean catch collection technique, antimicrobial selection and duration, as well as criteria for reflex urine cultures.

PL IX-4
THE IMPACT OF VANCOMYCIN LOADING DOSES ON ACUTE KIDNEY INJURY AMONG ELDERLY PATIENTS BEING TREATED IN THE EMERGENCY DEPARTMENT FOR SUSPECTED SEPSIS. Holly Ryan, Sapan Desai, Terence Chau, Memorial Hermann Memorial City Medical Center, Houston, TX.

PURPOSE: Effective management of patients with suspected sepsis includes the administration of appropriate broad-spectrum antibiotics within 1 hour. Previously, standard 1 gram doses of vancomycin administered every 12 hours have resulted in increased numbers of treatment
failures in serious infections caused by methicillin-resistant *Staphylococcus aureus*. Accordingly, loading doses of vancomycin are commonly utilized to rapidly attain adequate serum concentrations. However, vancomycin-induced acute kidney injury (AKI) is a concern; particularly with high doses in the elderly. This study aims to evaluate the impact of vancomycin loading doses on renal function in elderly patients presenting to the emergency department (ED) with suspected sepsis.

**METHODS:** This study will be submitted to the Institutional Review Board for approval. A retrospective chart review will be performed on patients presenting to the Memorial Hermann-Memorial City Medical Center ED. Patients who are 65 years or older, received intravenous (IV) vancomycin, and have a primary or secondary admitting diagnosis of sepsis will be included in the study. Patients with end-stage-renal disease requiring dialysis, no repeated serum creatinine (SCr) levels within 5 days of receiving IV vancomycin, and no documented weight will be excluded. The following data will be collected: patient demographics, baseline and repeat SCr levels, and receipt of computed tomography with contrast medium. Patients receiving vancomycin greater than 20 mg/kg will be compared to patients receiving less than or equal to 20 mg/kg to determine the primary outcome of AKI. AKI will be defined as greater than or equal to a 0.3 mg/dL increase or a 1.5-1.9 times baseline increase in SCr within 48 hours. The secondary endpoints will include risk factors associated with AKI, in-hospital mortality, and hospital length of stay.

**RESULTS:** Pending

**CONCLUSIONS:** Pending

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**PL IX-6**

**USE OF SUCCINYLCHOLINE VS ROCURONIUM FOR RAPID SEQUENCE INTUBATION IN EMERGENCY DEPARTMENT PATIENTS WITH NEUROLOGICAL EMERGENCIES.** Sitara Paladugu, Elizabeth Johnson, Laurimay Laroco, JPS Health Network, Fort Worth, TX.

**PURPOSE:** Rapid sequence intubation (RSI) is an emergency airway technique involving the use of an induction agent followed by a neuromuscular blocking agent (NMBA). During neurological emergencies, RSI agents should have minimal effects on intracranial pressure (ICP), so that they do not exacerbate brain injuries. Succinylcholine is the gold standard NMBA due to its pharmacokinetic advantages over rocuronium. Unfortunately, succinylcholine is associated with increased ICP per FDA preclinical trials, which could result in further neurological injury. Currently, there is a paucity of literature regarding which NMBA to utilize for RSI in brain injury patients. In 2016, Patanwala et al. concluded that succinylcholine was associated with higher mortality in patients with severe traumatic brain injuries. Our study was expanded to include both traumatic and non-traumatic brain injuries and to examine the utilization of premedications, induction agents, and ICP reduction agents.

**METHODS:** In our retrospective electronic chart review, patients ≥ 18 years were included if they had a diagnosis of spontaneous, traumatic or anticoagulant-induced intracerebral hemorrhage (ICH) and underwent RSI in the ED with succinylcholine or rocuronium. Our primary endpoint was in-hospital mortality. Secondary endpoints were intensive care unit length of stay, time to analgesedation, and neurologic functional outcomes.

**RESULTS:** Data collection in process.

**CONCLUSIONS:** To be determined.
PL IX-7
IMPACT OF PENICILLIN ALLERGY VERIFICATION ON ANTI Infectious PHYSICIAN PRESCRIBING PRACTICES IN THE EMERGENCY DEPARTMENT. John Witucki, Jan Ramos, Medical Center Hospital, Odessa TX.

PURPOSE: To identify the impact of pharmacist documentation and intervention in patients with non-life-threatening allergic reactions treated with penicillin-versus non-penicillin therapy and to identify common types of allergic reactions within groups. We also sought to determine the percentage of patients continued on similar therapy upon hospital admission and to determine whether the infection resolved with selected therapy.

METHODS: Using data retrospectively collected from the institution’s electronic records, we examined the nature of penicillin allergy as documented by emergency room personnel and antibiotic prescription data both initially and upon admission to the hospital.

RESULTS: A total of 275 patients were analyzed using historical records obtained from emergency department visits taking place between April 1, 2016 and March 31, 2017. Of these, 185 patients were excluded and 90 patients were analyzed further. The most common reasons for exclusion were lack of access to records (42%), no antibiotics administered (26%), no hospital admission (17%), and reported history of anaphylaxis to penicillins (8%). Of those patients that met inclusion criteria, a pharmacist verified allergy history in 76 patients (84%). 19 of the 90 included patients (21%) were given beta-lactams in the emergency department following allergy verification, and 16 of these 19 patients were continued on beta-lactam therapy on admission. Of those patients prescribed beta-lactams, only one allergic reaction was documented, which was not severe.

CONCLUSION: Diligent allergy verification by pharmacists allows prescribers to more comfortably prescribe beta-lactam antibiotics in patients with previous documented penicillin allergy and allows for greater antimicrobial stewardship throughout admission.

IXB – ONCOLOGY

PL IX-8
EFFECT OF CONCOMITANT ACID-REDUCING AGENTS ON EFFICACY OF CAPECITABINE IN ADVANCED GASTROINTESTINAL CANCERS. Andrea Clarke, Jill Comeau, Amanda Storer, Kelsey Trimble, Mindie Kavanaugh, University Health Shreveport, Shreveport, LA.

PURPOSE: Recent retrospective analyses evaluating capecitabine in metastatic gastroesophageal cancers and early-stage colorectal cancers suggest that use of proton-pump inhibitors may reduce the therapeutic efficacy of capecitabine. The goal of this study was to determine how the concomitant use of acid reducers affects the efficacy of capecitabine in the treatment of advanced gastrointestinal (GI) cancers. The primary objective of this study was to evaluate the difference in progression-free survival (PFS) in patients concomitantly treated with an acid-reducing agent versus those who were not. Secondary objectives were to evaluate differences in overall survival (OS), incidence of side effects, and incidence of dose reductions, delays, and discontinuations.

METHODS: This was a single-center, retrospective chart review of patients with advanced GI cancers being treated with capecitabine between January 1st, 2012, and July 31st, 2017. This study was approved by the Institutional Review Board. Patient charts were accessed via electronic medical record for all patients age 18 years and older who were prescribed capecitabine, and charts were reviewed for demographics, medications, toxicities, and patient outcomes. Statistical analysis was completed for all objectives using the statistical program SAS 9.4 for inferential and descriptive statistics.

RESULTS: A total of 212 patients who received capecitabine were screened, of which 60 patients met inclusion criteria. Of these 60 patients, 33.3% (n=20) were identified as using a proton-pump inhibitor or histamine-2 receptor antagonist as a home medication, and 66.6% (n=40) received no acid-reducing agent. Baseline characteristics between the two groups were similar with 70% (n=42) having colon cancer and 71.6% (n=43) having metastatic disease. Patients who received acid-reducing agents and those who did not had similar median PFS, 11.4 months vs. 10.92 months (p = 0.9853). Patients who received acid-reducing agents trended towards improved OS compared to those who did not receive acid-reducing agents (p = 0.0523). Incidence of side effects and incidence of dose reductions, delays, and discontinuations were not different between the two groups.

CONCLUSION: Use of acid-reducing agents as home medications did not impact PFS in advanced GI cancer patients taking capecitabine at this institution. However, patients on acid-reducing agents did trend towards worsened OS.

PL IX-9
ASSESSMENT OF THYROID FUNCTION TEST MONITORING BY MELANOMA MEDICAL ONCOLOGY. Michael Frei, Jocelyn, Joseph, Van Anh Trinh, The University of Texas MD Anderson Cancer Center, Houston, TX.

Purpose: Pembroliizumab and nivolumab are program cell death-1 (PD-1) inhibitors indicated for the treatment of malignant melanoma. Thyroid dysfunction is a unique side effect of anti-PD-1 therapy, affecting 9-10% of patients. Currently there are no established guidelines for thyroid function test (TFT) monitoring during anti-PD-1 therapy as the prescribing information suggests to obtain TFTs at baseline and periodically as clinically indicated. The purpose of this quality improvement project is to evaluate and standardize TFT monitoring practices in patients with malignant melanoma treated with anti-PD-1 monotherapy.

Methods: We performed a retrospective analysis of patients diagnosed with advanced melanoma who received 6 months of therapy with nivolumab or pembroliizumab between May 2015 and May 2017 at The University of Texas MD Anderson Cancer Center. We excluded patients who were on dual therapy with concurrent ipilimumab, those who previously received a PD-1 inhibitor, and those who were on a research protocol. Information regarding dates of TFTs, TFT results, dates of anti-PD-1 initiation and subsequent administrations, and baseline thyroid medication were collected. Data analysis included the incidence of thyroid
dysfunction, median times to onset of TFT abnormality and thyroid medication addition. The results will be presented to physicians of Melanoma Medical Oncology at our institution along with recommendations for a standardized TFT monitoring interval in patients on anti-PD-1 therapy. Subsequently, treatment plans will be modified to reflect the change, followed by post-implementation data analysis of compliance to the new TFT monitoring recommendation.

**Results:** Pending follow-up data collection

**Conclusion:** Pending follow-up data collection

**PL IX-10**


**Background:** Oncology medications account for a large number of newly approved drugs and significant healthcare costs annually. These agents often receive accelerated approval, resulting in lower certainty of clinical and cost effectiveness. This study evaluates real world usage of anaplastic lymphoma kinase (ALK) inhibitors and poly ADP ribose polymerase (PARP) inhibitors. Retrospective claims data from the Military Health System (MHS) were evaluated to compare real world results to clinical trial data.

**Objective:** Compare mortality, duration of therapy, and time to treatment change between clinical trials and the MHS population (active duty, retirees, and dependents).

**Methods:** This IRB-approved study evaluated duration of therapy and mortality for two classes of cancer medications: ALK inhibitors (alectinib, brigatinib, ceritinib, and crizotinib) and PARP inhibitors (rucaparib, olaparib, and niraparib). Results from clinical trials were compared with MHS data. Clinical trials were included if they investigated one of seven ALK or PARP inhibitors at its most effective dose and reported mortality and duration of therapy endpoints. Trials for non-FDA approved indications or combination therapy were excluded. MHS data collection included retrospective claims between the dates of January 1, 2010 and October 31, 2017. Endpoints included death, duration of treatment, and time to treatment change. Patients were required to have ICD-9 or 10 codes for lung cancer (ALK inhibitors) or ovarian cancer (PARP inhibitors); TRICARE Standard patients (who may have other health insurance) were excluded.

**Results:** Five of 37 published clinical trials met inclusion criteria. Drugs included were alectinib, ceritinib, crizotinib, olaparib, and rucaparib. Median duration of therapy reported in clinical trials ranged from 7 to 17.9 months for ALK inhibitors and 5.7 to 19.4 months for PARP inhibitors. A total of 236 patients in the MHS received an ALK inhibitor and 171 received a PARP inhibitor during the study period and met inclusion criteria. To determine duration of therapy, a total of 148 ALK inhibitor patients and 54 PARP inhibitor patients who did not receive medication during the last 6 months of the time period were identified. The average days supply (from start to discontinuation) was 185 days (6.2 months) for ALK inhibitors and 131 days (4.4 months) for PARP inhibitors. Mean number of prescription fills was 6.3 for ALK inhibitors and 6.6 for PARP inhibitors. A total of 88 ALK inhibitor patients and 117 PARP inhibitor patients continued to receive treatment during the last 6 months. Overall, 61% of patients treated with ALK inhibitors and 27% treated with PARP inhibitors died during the study time period. Drug-specific results, time to treatment change, and more detailed mortality results are in progress.

**Conclusions:** This study will assist the MHS to compare clinical trial results to real world Department of Defense data.

**PL IX-11**

**ADMINISTRATION OF PEGFILGRASTIM ON DAY 3 OF FOLFOX OR FOLFIRI CHEMOTHERAPY.** Donyika Joseph, Carli Nesheiwat, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA.

**Purpose:** The granulocyte colony-stimulating factor, pegfilgrastim, is conventionally administered on day 4 or 5 of FOLFOX or FOLFIRI as febrile neutropenia (FN) prophylaxis. At Our Lady of the Lake Mary Bird Perkins Cancer Center (OLOLMBPC), patients may receive pegfilgrastim after fluorouracil pump disconnect on Day 3 based on literature support and for patient convenience. The purpose of this study is to evaluate safety outcomes in patients receiving pegfilgrastim on day 3 versus those receiving conventional pegfilgrastim.

**Methods:** This IRB-approved prospective chart review included patients 18 years or older receiving at least one cycle of FOLFOX or FOLFIRI and one dose of pegfilgrastim. Those receiving pegfilgrastim on day 4 or more of their chemotherapy cycle (or pegfilgrastim on-body injector) were assigned to the Conventional Arm. Those receiving a pegfilgrastim injection on Day 3 were assigned to the Day 3 Arm. The primary objective of the study was the incidence of grade 3/4 neutropenia. Additional objectives were the incidence of documented FN as well as the incidence of chemotherapy dose reductions and/or delays.

**Results:** Fifty-three patients were included for a total of 319 cycles of FOLFOX or FOLFIRI with a dose of pegfilgrastim. Twelve patients were in the Conventional Arm (22.6%) and 41 patients in the Day 3 Arm (77.4%). Analysis in process, final data to be presented.

**Conclusion:** The majority of patients at our institution received pegfilgrastim on Day 3 after FOLFOX or FOLFIRI chemotherapy.
PL IX-12
DURATION OF THERAPY OF ANTIBIOTICS FOR STAPHYLOCOCCUS AUREUS BACTEREMIA IN ONCOLOGY PATIENTS. Kori E. Daniels, Jon D. Herrington, Elmor D. Pineda, Scott & White Medical Center – Temple, Texas.

Purpose: Staphylococcus aureus bacteremia has been reported to have a mortality rate of 20 – 40%. The IDSA guidelines for the treatment of methicillin-resistant S. aureus recommend treating patients for a minimum of 14 days. However, there are no guidance for the duration of therapy in the oncology population. Due to the lack of information available, the potential for inappropriate or excessive treatment durations could occur. This study’s purpose is to characterize and evaluate the oncology patient outcomes and the duration of antibiotic therapy for S. aureus bacteremia.

Methods: This IRB approved study is a retrospective review from 10/2007-10/2017. Inclusion criteria are at least 18 years of age, at least one positive blood culture of S. aureus, at least 75% of total antibiotic therapy with an appropriate antibiotic, and malignant diagnosis. Exclusion criteria are polymicrobial blood cultures, basal cell or squamous cell carcinoma as only malignancy. The primary endpoint is duration of antibiotic therapy. Secondary endpoints include the composite outcome of death and treatment failure. Exploratory endpoints will be performed as sub-group analyses on any factor that might have influenced duration of therapy and/or treatment failure/death (i.e. Infectious Disease consult, type of malignancy, resistant organism, low serum albumin, shock, and ANC). For statistics, characteristics of the sample are summarized using descriptive statistics. Means and standard deviations (or medians and ranges, if appropriate) are reported for continuous variables. Frequencies and percentages are reported for categorical variables.

Results: The preliminary data include 17 patients with bacteremia. 2 patients were treated with antibiotics for 1-14 days. 5 patients were treated with antibiotics for 15-28 days. 10 patients were treated with antibiotics for longer than 28 days. Further data to be presented.

PL IX-13 - OPEN

IXC – ONCOLOGY & PALLIATIVE CARE/PAIN MANAGEMENT

PL IX-14
ASSESSMENT OF HYPERSENSITIVITY REACTIONS WITH RITUXIMAB USED AT A QUATERNARY MEDICAL CENTER. Amanda Sirisaengtaksin, Onyebuchi Ononogbu, Melissa Manson, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

Purpose: To investigate the rate at which rituximab is given without premedication orders, assess hypersensitivity reactions to rituximab, and investigate the clinical risks of entering rituximab orders without premedication orders and the benefits of a premedication protocol.

Methods: This is a retrospective, observational study evaluating all patients who received rituximab between January 1, 2014 and December 31, 2016. A list of all patients who received rituximab was obtained from the SharePoint utilization database. The primary endpoint was the incidence of hypersensitivity reactions in all patients receiving rituximab. The secondary endpoints included the severity of hypersensitivity reactions and the percentage of rituximab given without premedication. Descriptive statistics and simple statistical methods were used to analyze the incidence of hypersensitivity reactions, severity of reactions, and premedication administration.

Results: An interin analysis of 101 patients who received rituximab was performed. Patient characteristics include: 51% male, mean age of 54 years [SD] ± 16.5, and 53.3% Caucasian. Fifteen percent of patients experienced a hypersensitivity reaction during rituximab infusion. Fifty percent of those patients experienced grade 1 severity (mild), 50% experienced grade 2 severity (moderate), and all of these patients received premedication. Four percent of all patients did not receive premedication.

Conclusion: Based on the interim data, patients who receive premedication may still experience mild to moderate hypersensitivity reactions.

PL IX-15
ASSESSMENT OF RISK FACTORS FOR IFOSFAMIDE-INDUCED NEUROTOXICITY AT AN ACADEMIC MEDICAL CENTER. Elizabeth Travers, Breanne Peyton-Thomas, Christopher Selby, Elizabeth Lafitte, Kelsey Trimble, Nebu Koshy, University Health, Shreveport, LA.

Purpose: To determine if concomitant use of fosaprepitant increases the risk of ifosfamide-induced neurotoxicity. The secondary objective is to evaluate if other risk factors (albumin, creatinine, blood urea nitrogen, hemoglobin, liver function tests, prior cisplatin use, ifosfamide formulation, use of cytochrome P450 2B6 inhibitors and strong cytochrome P450 3A4 inhibitors) also contribute to ifosfamide-induced neurotoxicity.

Methods: This is a single-center, retrospective chart review that was approved by the Institutional Review Board. The electronic medical record was used to identify patients who received ifosfamide-containing chemotherapy regimens. The following data points were collected: medical record number, gender, age, height, weight, cancer type, chemotherapy regimen, cycle number, date of cycle, serum albumin levels, blood urea nitrogen, body mass index, body surface area, if neurotoxicity occurred, day of cycle neurotoxicity occurred, alanine aminotransferase, aspartate aminotransferase, creatinine clearance, hemoglobin, serum creatinine, if acute kidney injury occurred, total bilirubin, prophylixas with methylene blue, previous cisplatin, total dose of ifosfamide per cycle (mg/m^2), total dose per cycle (mg), daily dose (mg), fractionated vs. continuous dosing, ifosfamide preparation (powder vs. liquid), use of fosaprepitant, use of CYP450 2B6 and strong CYP450 3A4 inhibitors. Provider documentation was used to determine the presence of neurotoxicity, as defined by at least one of the following (changed from baseline): confusion, lethargy, drowsiness, altered mental status, delirium, hallucinations or psychosis. Data will be analyzed by a statistician to look for correlations in patient factors and development of neurotoxicity.

Results: 211 cycles of ifosfamide chemotherapy from 82 different patients met inclusion criteria. 87 of these cycles
INCLUDED THE USE OF FOSAPREPIANT WHILE 124 CYCLES DID NOT. OF THE 82 PATIENTS; 25 HAD HL, 27 HAD NHL, 11 HAD SARCOMA, NINE HAD GERM CELL TUMORS, FOUR HAD CHONDROSARCOMA AND THE REMAINING HAD SIX OTHER TYPES OF CANCER. THERE WERE EIGHT INSTANCES (3.8%) OF NEUROTOXICITY IN EIGHT DIFFERENT PATIENTS. OF THE EIGHT PATIENTS WHO DEVELOPED NEUROTOXICITY, SIX RECEIVED FOSAPREPIANT. TWO PATIENTS WHO DEVELOPED NEUROTOXICITY ALSO RECEIVED RITONAVIR. SIX PATIENTS WERE BELIEVED TO RECEIVE THE LIQUID FORMULATION OF IFOFSAMIDE WHILE TWO PATIENTS RECEIVED THE POWDER. FOUR PATIENTS HAD ALSO HAD PRIOR EXPOSURE TO CISPLATIN. THREE OF THE PATIENTS WERE RECEIVING METHYLENE BLUE FOR PROPHYLAXIS AND STILL DEVELOPED NEUROTOXICITY DESPITE ADEQUATE PROPHYLAXIS.

CONCLUSION: AT THIS TIME, FOSAPREPIANT DOES NOT APPEAR TO BE THE SOLE CONTRIBUTING FACTOR IN THE DEVELOPMENT OF NEUROTOXICITY. FURTHER DESCRIPTIVE STATISTICS ARE NEEDED TO IDENTIFY TRENDS IN OUR SECONDARY ENDPOINTS.

PL IX-16
EVALUATION OF THE OPIOID SAFETY INITIATIVE THROUGH Z-DRUG PRESCRIBING TRENDS POST BENZODIAZEPINE DISCONTINUATION IN A VETERAN POPULATION. Gordon W. Ang, Geeta Maggu, Central Texas Veterans Health Care System, Temple, TX.

PURPOSE: TO EVALUATE THE PROPORTION OF PATIENTS WHO DISCONTINUED A BENZODIAZEPINE WHEN USED IN COMBINATION WITH OPIOID THERAPY THAT RECEIVED A PRESCRIPTION FOR A Z-DRUG. FURTHERMORE, THE PROJECT AIMS TO EVALUATE WHETHER IMPLEMENTATION OF THE OSI ADEQUATELY CONTROLLED PAIN AND REDUCED HARM WHEN LEADING TO INITIATION OF A Z-DRUG.

METHODS: RETROSPECTIVE DATA FROM A SINGLE SITE WAS USED TO CALCULATE THE PROPORTION OF PATIENTS WITH A PRESCRIPTION FOR A Z-DRUG AFTER DISCONTINUING A BENZODIAZEPINE THAT WAS CONCURRENT WITH AN OPIOID. CHANGES IN NUMERIC PAIN SCORE, HOSPITALIZATION RATES, AND ADVERSE EFFECT RATES WERE CALCULATED AND COMPARED BETWEEN PATIENTS WHO RECEIVED A PRESCRIPTION FOR A Z-DRUG AND PATIENTS WHO DID NOT.

RESULTS: OF 958 PATIENTS MEETING INCLUSION CRITERIA, 103 (10.8%) RECEIVED A PRESCRIPTION FOR A Z-DRUG AFTER DISCONTINUATION OF A BENZODIAZEPINE. OF THE 103 PATIENTS WHO RECEIVED A PRESCRIPTION FOR A Z-DRUG, 18 PATIENTS HAD NOT RECEIVED A PRESCRIPTION FOR A Z-DRUG IN THE PAST. IN THE Z-DRUG GROUP, 22 (21.4%) PATIENTS WERE HOSPITALIZED DURING THE STUDY PERIOD, WHILE 137 (16.0%) PATIENTS WITHOUT A Z-DRUG WERE HOSPITALIZED (RR 1.33, p = 0.16). DIFFERENCE IN FIRST NUMERIC PAIN SCORES AFTER BENZODIAZEPINE DISCONTINUATION BETWEEN THOSE RECEIVING A Z-DRUG AND THOSE THAT DID NOT WAS 6.03 (95% CI 0.72 – 1.07). DIFFERENCE IN NUMERIC PAIN SCORE 3-6 MONTHS AFTER BENZODIAZEPINE DISCONTINUATION BETWEEN THE TWO GROUPS WAS 0.02 (95% CI -0.75 – 1.23). NO ADVERSE DRUG REACTIONS WERE IDENTIFIED IN THE Z-DRUG PRESCRIPTION GROUP, WHILE 4 ADVERSE DRUG REACTIONS WERE IDENTIFIED IN THE NO Z-DRUG PRESCRIPTION GROUP (p = 0.49).

CONCLUSION: PRESCRIBERS IN THE CENTRAL TEXAS VETERANS AFFAIRS HEALTH CARE SYSTEM ARE NOT REPLACING BENZODIAZEPINES WITH Z-DRUG AT A SIGNIFICANT RATE. NO STATISTICAL DIFFERENCES IN PAIN SCORES NOR ADVERSE DRUG EVENTS WERE FOUND BETWEEN PATIENTS PRESCRIBED A Z-DRUG AND PATIENTS WHO WERE NOT AFTER BENZODIAZEPINE DISCONTINUATION. THE INCREASED RISK OF HOSPITALIZATION WITH Z-DRUG PRESCRIBING WARRANTS FURTHER ANALYSIS ON THE RISKS OF PRESCRIBING Z-DRUGS WHEN USED IN COMBINATION WITH OPIOID THERAPY.
**EMPIRIC BROAD-SPECTRUM COVERAGE.** Janel Liane Cala, Minh Hong, Vani Selvan, Medical Center Hospital, Odessa, TX.

**BACKGROUND:** Carbapenems are a novel class of beta-lactams that have a wide spectrum of coverage against multi-drug resistant pathogens, such as extended-spectrum producing beta-lactamase [ESBL]. Carbapenem-resistant Enterobacteriaceae [CRE], have resulted in both healthcare and community settings as a result of expanded use of carbapenems, and are a growing threat in the fight against antibiotic resistance. The outcome of this study may assist in the sparing of carbapenem use and preventing further rise of carbapenem-resistant bacteria. A previous study by Besanti et al comparing piperacillin/tazobactam VS meropenem for broad-spectrum coverage in sepsis secondary to pneumonia showed no significant mortality difference between groups. However, the results of this trial might have been skewed by the imbalance of SOFA score distribution in the baseline characteristics. This trial will be a continuum of the previous study by Besanti et al with slight modification of the study protocol in the patient selection and classification to eliminate this significant confounding factor.

**PURPOSE:** To determine the difference in clinical outcomes and recurrent hospitalizations between treatment with piperacillin/tazobactam versus meropenem for broad-spectrum coverage in sepsis secondary to pneumonia.

**METHODS:** Patients will be screened with ICD-9/10 codes for sepsis secondary to pneumonia (A41.9 [sepsis, unspecified organisms], R65.21 [severe sepsis with septic shock], J18.9 [pneumonia, unspecified organism]). This study will be a retrospective chart review of 4500 identified patients between January 2008 to December 2016. Patient demographics (age, sex, weight, race), WBC, baseline temperature, heart rate, respiratory rate, blood pressure, platelets, bilirubin, GCS, ICU length of stay and average hospital length of stay data will be collected and assessed. Microbiologic cultures from admission, baseline comorbidities, and antibiotic treatment in addition to piperacillin/tazobactam and meropenem will also be considered and documented. Groups will be divided into those that received piperacillin-tazobactam or meropenem for empiric treatment of sepsis and pneumonia. SOFA scoring will be calculated per patient and groups will be further subdivided according to severity of SOFA score (0 – 9 [<20% mortality], 10 – 14 (>20 and <60% mortality), 15 - 24 (>90% Mortality)). All-cause mortality and early clinical response will be assessed and evaluated between treatment groups.

**RESULTS**

**CONCLUSION:** In progress

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43543 MME/day (16.75% decrease), and average patient daily MME decreased from 41 MME to 34 MME (17.07% decrease).

**CONCLUSION:** Based on preliminary analysis, the reception of an opioid safety letter may have contributed to a decrease in chronic opioid use.

**PL IX-1 - OPEN**

**XA – INFECTIOUS DISEASES/HIV**

**PL X-1**

**EVALUATING THE IMPACT OF OPIOIDS ON LENGTH OF STAY IN PATIENTS WITH CLOSTRIDIUM DIFFICILE INFECTIONS.** Monica Do, Jon Herrington, Esther Yi, Jerry Smith, Scott & White Medical Center – Temple, Temple, TX.

**PURPOSE:** The Infectious Diseases Society of America (IDSA) and the American College of Gastroenterology both recommend the avoidance of anti-peristaltic agents in patients with Clostridium difficile infections (CDIs) to prevent complications, but these recommendations are based on poor/low quality evidence. Opioids have a class effect of decreasing peristalsis. Therefore, the opioid population can be used to examine the possible link between anti-peristaltic use and worse outcomes. The purpose of this study is to evaluate opioid use as a potential risk factor for more severe/complicated CDIs.

**METHODS:** This IRB approved retrospective study evaluated patients over a three-year period. Using data retrospectively collected from the institution’s electronic records, we identified patients with a first time diagnosis of CDI diagnosed within seventy-two-hours of admission. The two groups compared included patients in the no opioid group (NOG), which included patients taking an average of less than or equal to 10 milligrams of oral morphine equivalents (OMEs) per day, and patients in the opioid group (OG), which included patients taking an average of more than 10 milligrams of OMEs per day. The primary endpoint was difference in length of stay (LOS). Secondary endpoints included CDI severity based on IDSA classification, incidence of complicated infections, recurrence within ninety days, and all-cause mortality within thirty days of diagnosis.

**RESULTS:** A total of 110 patients were included in this study with 69 patients in the NOG and 43 in the OG. 74% of the study population consisted of females, and the median Charlson Comorbidity Index among both groups was 3. The average age in the NOG was 73. The average age in the OG was 59. Additional data will be presented.

**CONCLUSION:** Based on this small retrospective analysis, it appears opioid use may not increase LOS in patients with CDIs. Future prospective studies are needed to confirm this finding.

**PL X-2**

**COMPARATIVE USE OF PIPERACILLIN/TAZOBACTAM VERSUS MEROPENEM IN PATIENTS WITH SEPSIS SECONDARY TO PNEUMONIA REQUIRING**
**PL X-3**

**RISK OF INFECTION IN PATIENTS RECEIVING SHORT VERSUS LONG DURATION OF ANTIMICROBIAL PROPHYLAXIS IN NEUROSURGERY.** Chelsea Bast, Peter Colley, Jennifer Roth, Richard Naftalis, Mezgebe Berhe, Baylor University Medical Center, Dallas, TX.

**PURPOSE:** Guidelines recommend periprocedural administration 60 minutes prior to neurosurgery or a total of 24-48 hours for patients undergoing cerebrospinal fluid-shunting procedure. Despite guideline recommendations, practice varies which may expose patients to longer duration of antimicrobials. The purpose is to determine the surgical site infection (SSI) rate for patients undergoing neurosurgery who receive varying duration of antimicrobial prophylaxis.

**METHODS:** This is a single-center retrospective, cohort study of patients who underwent neurosurgery at a community tertiary institution from January 1, 2014 to September 30, 2017. Patients who receive short (up to 24 hours) versus long (greater than 24 hours) duration of antimicrobial prophylaxis are compared. Inclusion criteria are patients 18 years and older who receive antimicrobial prophylaxis for first neurosurgery. Exclusion criteria include pregnancy. Presence of cerebrospinal fluid leak, antimicrobials for documented or suspected infection unrelated to SSI, basilar skull fracture, penetrating trauma or meningitis. The primary endpoint is surgical site infection within 90 days of neurosurgery.

**RESULTS:** Research in progress.

**CONCLUSION:** Research in progress.

**PL X-4**

**EVALUATION OF ANTIBIOTIC USE IN URINARY TRACT INFECTIONS NOT REQUIRING ADMISSION IN A COMMUNITY HOSPITAL EMERGENCY DEPARTMENT.** Desereé A. Reyna, Michelle K. House, Jared T. Gower, Theresa B. Yarger, Baylor Scott and White-All Saints Medical Center, Fort Worth, TX.

**PURPOSE:** To analyze an emergency department’s empiric antibiotic prescribing patterns and uropathogen susceptibilities for patients presenting with urinary tract infections not requiring admission. As fluoroquinolone resistance continues to increase, prescribers and pharmacists must consistently evaluate the empiric use of this class of antibiotics.

**METHODS:** This is a retrospective, observational study that will review electronic medical records to identify patients with an index emergency department visit identified by ICD-10 code N39.0 (cystitis) or N10 (pyelonephritis) from January 2017 to June 2017. Patients identified must have a urinary analysis with cultures and evaluation by an emergency department practitioner not requiring inpatient admission. The de-identified data collected will include patient demographics, antibiotic allergies, urinary analysis, urine culture sensitivities, antibiotic at discharge, appropriateness of empiric antibiotic therapy, and any change from empiric antibiotic therapy. The electronic medical records will be reviewed for previous admissions and secondary visits to the emergency department within 30 days of the index visit.

**RESULTS:** Pending data analysis

**CONCLUSION:** Pending data analysis

**PL X-5**

**IMPACT OF A PHARMACIST-DRIVEN PROBIOTIC PROTOCOL ON THE INCIDENCE OF ANTIBIOTIC- AND CLOSTRIDIUM DIFFICILE-ASSOCIATED DIARRHEA IN HOSPITALIZED PATIENTS RECEIVING ANTIBIOTIC THERAPY.** Mona Kamali, Lisa Mayer, Ahmad Ashfaq, Vijay K. Kolli, Saud Ahmed, Norman Regional Health System, Norman, OK.

**PURPOSE:** Clostridium difficile-associated diarrhea (CDAD), one of the most serious forms of antibiotic-associated diarrhea (AAD), is a leading cause of healthcare-associated infections (HAIs). In addition to significant mortality, CDAD contributes to increased length of stay, subsequent infections, and healthcare costs. Increasing evidence shows probiotics may reduce the incidence of AAD and CDAD by up to fifty percent or more. The proposed mechanism of probiotics occurs through competition with pathogens for nutrients and inhibition of pathogen adherence to gastrointestinal mucosa. This study evaluated whether a pharmacist-driven probiotic protocol would reduce the incidence of AAD and healthcare-associated CDAD as well as associated costs.

**METHODS:** This was a multi-center, quasi-experimental design study which evaluated the impact of a pharmacist-driven probiotic protocol on the incidence of AAD and healthcare-associated CDAD in patients receiving antibiotics. Healthcare-associated CDAD included the total incidence of Healthcare Facility-Onset C. difficile infection (HO-CAD) and Community-Onset Healthcare Facility-Associated CDI (CO-HCFA CDI). Patients were divided into two groups: Group 1 (July 1 to September 30, 2017) - pre-implementation of probiotic protocol and Group 2 (January 16 to April 17, 2018) - post-implementation of probiotic protocol. An Institutional Review Board approved probiotic protocol allowed pharmacists to initiate either Bio-K Plus® (lactobacillus acidophilus, casei, and rhamnosus) 1 capsule [50 billion colony forming units (CFU)] by mouth twice daily or Lactinex® (lactobacillus acidophilus and bulgaricus) 4 tabs [4 million CFU] per tube four times daily for eligible patients during the post-intervention period. Patients were included if they were 18 years of age or older and receiving antibiotics while admitted to a acute care unit at Norman Regional Health System. Patients were excluded if they were pregnant, lactating, receiving antibiotics for surgical prophylaxis or were unable to be fed through the gastrointestinal tract. Probiotics were to be administered with the first dose of antibiotics, preferably within 2 days of antibiotic initiation, and to continue for 5 days after completion of antibiotics. Clinical pharmacists monitored all eligible patients daily through a clinical surveillance system to ensure probiotics were appropriately ordered and no serious adverse effects occurred. The primary outcome was the incidence of AAD and healthcare-associated CDAD in hospitalized patients receiving antibiotics and probiotics compared to those not receiving probiotics. Secondary outcomes included adverse effects, potential cost savings, and timing of initial probiotic administration.

**RESULTS:** During the pre-intervention interim (July 1 to July 30, 2017), 4 patients had healthcare-associated CDAD (HO-CAD: n=3; CO-HCFA CDI: n=1) compared to 3 patients (HO-CAD: n=0; CO-HCFA CDI: n=3) in the post-intervention interim (January 16 to February 14, 2018).
Overall, the incidence of healthcare-associated CDAD and HO-CDI decreased by 25% and 100%, respectively.

CONCLUSION: Pending completion of data collection and analysis.

**PL X-6**

**IMPACT OF SKIN TESTING FOR PENICILLIN ALLERGY IN SELF-REPORTED PENICILLIN ALLERGIC PATIENTS ON THE USE OF FLUOROQUINOLONES, CARBAPENEMS, AZTREONAM AND VANCOMYCIN IN A COMMUNITY HOSPITAL.**

Jaclyn Coffey, Betsy Nelson, Ahmad Ashfaq, Saud Ahmed, Vijay Kolli, Norman Regional Health System, Norman, OK.

**PURPOSE:** To determine if skin testing for penicillin allergy in self-reported penicillin allergic patients decreases the use of fluoroquinolones, carbapenems, aztreonam, and vancomycin in a community hospital. Patients reporting an allergic reaction to penicillin antibiotics are frequently prescribed alternative antibiotics that are more expensive such as carbapenems and aztreonam and have more severe side effects such as fluoroquinolones and vancomycin.

**METHODS:** This is an observational, non-randomized study that was approved by the Institutional Review Board. Clinical pharmacists will utilize real-time clinical data software to identify patients with a penicillin allergy and a current order for antibiotics. Identified patients will be interviewed by a clinical pharmacist using a standardized questionnaire. Patients will be included or excluded based on criteria approved by the Pharmacy and Therapeutics Committee. Consent for penicillin skin testing will be obtained prior to skin testing by the clinical pharmacist. The nurse performing the skin testing will communicate the skin test results to the clinical pharmacist who will then discuss the results with the attending physician and recommend appropriate changes to the patient’s antibiotic regimen. All patients that receive penicillin allergy skin testing will receive their results and education from the clinical pharmacist. Patient allergies will be updated in the electronic medical record. Data collection will include patient demographics, diagnoses, comorbidities, length of stay, skin testing results, antibiotic regimen including duration, and cultures and sensitivity results if available. Data collected during the study period will be compared to data collected prior to the implementation of penicillin skin testing. All patient information will be de-identified and kept confidential.

**RESULTS:** Research in progress.

**CONCLUSION:** Research in progress.

**PL X-7 - OPEN**

**XB – INFECTIOUS DISEASES/HIV**

**PL X-8**

**EVALUATION OF A NON-24 HOUR VANCOMYCIN PHARMACY PHARMACOKINETIC CONSULT SERVICE: AN ANALYSIS OF A PILOT STUDY.**

Parna Haghparast, Michelle Munch, Amy Harzke, Janet Gonzalez, Melissa Johnson, UTMB-CMC, Huntsville, TX.

**Purpose:** The purpose of this research is to evaluate a pilot vancomycin Pharmacy Pharmacokinetic Consult Service (PPCS) at a pharmacy department open Monday through Friday by conducting a direct comparison between provider managed vs. PPCS with respect to the achievement of therapeutic trough levels. Other parameters of interest include the indication for vancomycin administration, dosing, nephrotoxicity, concurrent nephrotoxins and rates of hospitalization. If the results of the pharmacy vancomycin consult service demonstrate improvement in empiric dosing, monitoring parameters, and patient outcomes, the pharmacy department will expand the service to other facilities.

**Method:** For provider managed, retrospective data collected from a departmental vancomycin medication use evaluation (MUE) was utilized. This data included patients receiving vancomycin for ≥ 5 days between July 1st 2014 and June 30th 2015. A random sample of infirmary patients were included from the MUE. Group two consists of patients enrolled in the PPCS at the pilot facility from May 4th 2017 to February 1st 2018. In both groups, patients on hemodialysis or with a body mass index > 40 Kg/m² were excluded. The following data was collected from the electronic health record: demographics, indication for vancomycin, serum creatinine, weight, concurrent nephrotoxins, trough level and time, vancomycin weight based dose, dose adjustments, need for additional antibiotic treatment within 30 days of vancomycin and rate of hospitalization within 30 days. Patient demographics and baseline characteristics will be described using mean, median, mode for continuous data (e.g., age) and proportions for categorical data (e.g., gender). All data under vancomycin specific information will be treated as categorical variables, calculated as percentages, and compared using Pearson chi-square tests.

**PL X-9**

**CLINICAL OUTCOMES FOLLOWING INFECTIOUS DISEASES SOCIETY OF AMERICA (IDSA) GUIDELINES FOR TREATMENT OF NEUTROPENIC FEVER IN CANCER PATIENTS.**

Michelle Aguirre, Minh Hong, Lindsay Rumold, Vani Selvan, Medical Center Hospital, Odessa, TX.

**Purpose:** To compare mortality rates in patients admitted to Medical Center Hospital with a diagnosis of febrile neutropenia treated with antimicrobial agents according to the Infectious Diseases Society of America (IDSA) guideline recommendations versus those not following IDSA recommendations.

**Methods:** Using a retrospective chart review, we compared rates of in-hospital mortality in patients with an ICD-9/10 code of febrile neutropenia admitted from 2006-2017 and categorized them into appropriate treatment, overtreatment and under-treatment groups when compared to IDSA guidelines.
RETURNS: This review identified 535 patient encounters with evaluable admissions. Of these, 57 patients met all inclusion criteria and were included in the analysis. Results show that 21 (37%) patients were treated according to IDSA guideline recommendations. When guidelines were not followed, more patients (49%) were over-treated than were under-treated (5%). There were only 6 (11%) patients in the sample (n=57) who died in-hospital, with no differences in mortality between the three treatment groups (p=0.85). When comparing mortality in those appropriately treated according to the IDSA guidelines to everyone else, there were also no significant differences (p=0.48), but this is likely due to the low incidence of mortality and small sample size. Longer median hospital stays (p <0.004), longer median number of days on antibiotics (p <0.001), and longer length of days until ANC >500 neutrophils/mL (p=0.001) are seen for the overtreatment group than for the appropriate and under-treatment groups.

CONCLUSION: Based on the data, there was no difference in mortality between groups following compared to those not following IDSA guidelines. However, patients who were given the appropriate treatment had shorter LOS, less antibiotic utilization, and faster ANC recovery. Establishing a hospital protocol may be of use to facilitate treatment of febrile neutropenia at our institution.

PL X-10
THERAPEUTIC DRUG MONITORING OF VANCOMYCIN AUC-24/MIC IN OBESE PATIENTS TO REDUCE NEPHROTOXICITY. Katherine M. Gallaga, Laura Sample, Rachel Jolly, Andrea Payne, Rose Cherian, CHRISTUS Spohn Health System, Corpus Christi, TX.

BACKGROUND: Vancomycin is often used as first-line in many infectious disease states when methicillin-resistant staphylococcus aureus (MRSA) is suspected. This medication requires therapeutic drug monitoring (TDM) due to its narrow therapeutic index. The guidelines for vancomycin TDM recommend the use of total body weight for dosing, which may increase the risk of dose-related nephrotoxicity in the obese population. Another major challenge in this patient population is their altered pharmacokinetic profile. AUC-24/MIC of at least 400 is the preferred method to determine vancomycin’s antimicrobial activity; however, serum trough levels are suggested as a surrogate marker of AUC-24/MIC due to ease and accuracy. Using a two-level approach to dose vancomycin can potentially decrease the incidence of nephrotoxicity in the obese population by targeting a patient’s total exposure to the therapy.

PURPOSE: The purpose of this study is to compare the incidence of nephrotoxicity with TDM of vancomycin using AUC-24/MIC two-level approach versus trough-only approach in obese patients.

METHODS: This is a retrospective study comparing outcomes of patients with vancomycin therapy that was adjusted based on AUC calculations using two-level approach versus trough-only calculations using one-level approach. The study was approved by the Institutional Review Board. Patients were included if they were between the ages of 18 to 90 years old who have a BMI of at least 30 with a pharmacy-to-dose vancomycin consult before the third dose was administered. Patient were excluded if they received less than 48 hours of therapy, the CrCL < 30 ml/min, found to have renal instability, pregnant, previously received, received chemotherapy within the last 14 days, or admitted to the ICU on vasopressor therapy. The primary outcome data to be collected is incidence of nephrotoxicity as defined by as a 0.5 mg/dL increase in the serum creatinine concentration, a 50% increase in baseline serum creatinine concentration, or a 50% decrease in the baseline creatinine clearance. Secondary outcome data to be collected include time to negative culture, average trough concentration, and hospital length of stay.

RESULTS: Retrospective data collection is ongoing.

CONCLUSION: Conclusions to be presented following data collection.

PL X-11
IMPLEMENTATION OF A CONTINUOUS INFUSION PIPERACILLIN-TAZOBACTAM PROTOCOL IN CRITICALLY ILL PATIENTS. Ethan George, Caitlin Shamrock Kocherla, Ashley Selby, Kelsey Trimble, Andrew Stevenson Joel Chandranesan, University Health Shreveport, Louisiana State University Health Shreveport, Shreveport, LA.

PURPOSE: Numerous pharmacokinetic, retrospective and prospective studies have shown the clinical benefits of continuous infusion piperacillin-tazobactam in critically ill patients; however, few have primarily focused on the drug cost savings. The primary objective of this study is to compare the drug cost of continuous infusion piperacillin-tazobactam to intermittent bolus piperacillin-tazobactam. Secondary objectives are to compare length of intensive care unit (ICU) and hospital stay, and incidence of adverse events.

METHODS: This is a single-center, quality improvement study conducted at University Health Shreveport, an academic medical center. Inclusion criteria include: patients who are 18 to 79 years old, with a calculated creatinine clearance greater than or equal to 20 mL/min, with confirmed or presumed sepsis, who received continuous infusion or intermittent bolus piperacillin-tazobactam in the ICU and/or step down unit. The electronic health record system will be used to collect the following information: age, gender, prescribed inpatient antibiotics, total number of doses received, number of ICU days, hospital length of stay in days, and adverse events experienced by the patients. The cost of piperacillin-tazobactam will be determined based on the average wholesale price and the acquisition cost for University Health Shreveport.

RESULTS: In process.

PL X-12

PURPOSE: Due to the rise in antibiotic resistance, patients are commonly started on empirically broad-spectrum antibiotics to cover multiple infections as a precaution. By initially choosing a broad-spectrum antibiotic there is a decreased chance in choosing incorrect coverage at the beginning of therapy. This study will determine the possible consequences of keeping patients on broad-spectrum antibiotics.
EXAMINATION OF MICROBIOLOGICAL AND TREATMENT DIFFERENCES OF EARLY-ONSET AND LATE-ONSET NEONATAL SEPSIS IN A NEONATAL INTENSIVE CARE UNIT. Sarah K Hayes, Methodist Hospital and Methodist Children’s Hospital; San Antonio, TX.

PURPOSE: Neonatal sepsis is one of the most important causes of morbidity and mortality in neonates. It is estimated it causes approximately 26% of neonatal mortality worldwide. The symptoms of neonatal sepsis are generally non-specific, and therefore many neonates will receive a course of broad-spectrum antibiotics without an infection. Based on recently published data, 90% of cultures in neonatal sepsis will become positive within 48 hours. However, the culture trends for Methodist Children’s Hospital (MCH) specifically are unknown at this point. The purpose of this study is to examine the microbiological and treatment differences between early- and late-onset sepsis in the neonatal intensive care unit (NICU) at MCH in San Antonio, TX.

METHODS: The protocol for this study was approved by the Institutional Review Board (IRB) and consists of a single-center, retrospective chart review of patients admitted to the NICU at MCH from April 2014 through December 2017. Patients will be included if they have a positive bacterial blood or urine culture and if the culture occurred while the patient was less than 28 days of age. Patients will be divided by early-onset (within 72 hours of life) and late-onset (greater than 72 hours of life). Each group will be further divided into pre-term (less than 37-weeks gestational age) or term (greater than 37-weeks gestational age), and urine or blood cultures. The following parameters will be collected for all patients: birth date, gender, gestational age, culture source, organism grown, time sample drawn, time of positive gram stain, initial antibiotic regimen, antibiotic regimen following culture results, max C-reactive protein, time of max C-reactive protein, max temperature, time of max temperature, max lactic acid, and time of max lactic acid.

RESULTS: Data collection from April 2014 to December 2017 identified several hundred patients with positive bacterial blood and urine cultures in the NICU. Within this group, approximately 200 patients were identified who met the full inclusion criteria and will be included in the study. Retrospective data identified approximately two hundred patients who met the inclusion criteria from April 2014 to December 2017. Data is currently being gathered and analyzed. Analysis will be completed by March 2018.

CONCLUSIONS: The conclusion will be based on the final data analysis.
from end of therapy for an infectious complication, and in the fluoroquinolone group, a switch back to a beta-lactam antibiotic.

RESULTS: Thirty-seven patients were evaluated. The hepatobiliary system was the most common identifiable source of SAG bacteremia. The median duration of therapy was 25 days (range, 4 to 58). Treatment failure occurred in 10% of patients (1/10) treated with a fluoroquinolone and 7% of patients (2/27) treated with a beta-lactam. One fluoroquinolone-treated patient and two beta-lactam-treated patients experienced a 30-day readmission for an infectious complication. Two patients in the beta-lactam group died within 30 days of treatment initiation.

CONCLUSION: Treatment failure was similar between patients receiving a beta-lactam or a fluoroquinolone for the treatment of S. anginosus group bacteremia. However, a larger study is needed to confirm these findings.

PL X-16 IMPACT OF A PHARMACIST-MANAGED INTRAVENOUS TO ORAL CONVERSION OF ANTIMICROBIALS AT AN ACADEMIC MEDICAL CENTER. Ashitha Jayachandran, David Reynoso, Wai-Ying M. Lam, R. Scott Ferren, UTMB Health, Galveston, TX.

PURPOSE: Antimicrobial stewardship programs aim to ensure appropriate use of antimicrobials by selecting the most appropriate drug, dose, duration and route of administration. The Centers for Disease Control and Prevention, Infectious Diseases Society of America, and Society of Healthcare Epidemiology of America guidelines recommend that a method for timely transition of intravenous (IV) to oral (PO) antimicrobials be implemented as part of antimicrobial stewardship programs. Timely conversion to PO therapy has been shown to decrease costs and hospital length of stay. This study will assess the impact of a pharmacist-managed antimicrobial IV to PO conversion service at an academic medical center.

METHODS: This study will consist of a retrospective pre-intervention phase from November 1, 2016 to April 30, 2017, and a prospective post-intervention phase from November 1, 2017 to April 30, 2018. It will include all patients over the age of 18 on IV levofloxacin, azithromycin, fluconazole, or metronidazole for at least 48 hours. Data will be collected via chart review in the pre-intervention phase. During the post-intervention phase, pharmacists conducting the study will actively evaluate and intervene on eligible patients. Patients must be able to tolerate PO or enteral medications, have a functioning gastrointestinal tract, normalizing white blood cell count, and stable vital signs to be an eligible candidate. The primary outcome evaluated will be days on IV therapy. Secondary outcomes include days on PO therapy post-conversion, number of patients discharged with a peripherally-inserted central catheter, number of conversions back to IV therapy during admission, cost of antimicrobial agents to the institution, hospital length of stay, 30-day readmission rate, and 30-day all-cause mortality. A sub-study analysis will be conducted on results for each individual medication in the study.

PRELIMINARY RESULTS: Data for 20 consecutive orders from each phase of the study has been collected thus far. The pre-intervention phase included eight levofloxacin orders (40%), two azithromycin orders (10%), five fluconazole orders (25%) and five metronidazole orders (25%). The post-intervention phase included 11 levofloxacin orders (55%), three azithromycin orders (15%), three fluconazole orders (15%), and three metronidazole orders (15%). Preliminary analysis of the data collected showed a decrease in days of IV therapy by 2.5 days (P=0.0093) and an increase in days of PO therapy by 1.2 days (P=0.0001). Of the 20 orders completed thus far, total cost of antimicrobial therapy to the institution has decreased from $426.79 in the pre-intervention phase to $296.10 in the post-intervention phase (P=0.0119).

CONCLUSION: Preliminary results show that a pharmacist-managed conversion service can potentially reduce days of IV therapy and total antimicrobial cost for the admission.

PL X-17 OUTCOMES ANALYSIS IN PATIENTS WITH EXTENDED SPECTRUM BETA LACTAMASE BACTEREMIA EMPIRICALLY TREATED WITH PIPERACILLIN/TAZOBACTAM VERSUS CARBAPENEMS. Reeba John, Peter Colley, Mezgebe Berhe, Baylor University Medical Center, Dallas, TX.

PURPOSE: The increasing prevalence of extended spectrum beta-lactamase (ESBL) infections is problematic due to its association with poor outcomes and limited treatment options. While carbapenems (CBP) are the drugs of choice, studies investigating outcomes of ESBL bacteremia have shown mixed clinical efficacy of beta-lactam/beta-lactamase inhibitor (BLBLI) combinations when compared to a CBP. The purpose of this study is to evaluate clinical outcomes in hospitalized patients with ESBL bacteremia who were treated empirically with either piperacillin/tazobactam (PTZ) or a CBP.

METHODS: This multi-center, retrospective chart review will include patients admitted to Baylor Scott and White Hospitals in the North Texas Division (from January 1, 2014 to September 22, 2017) who had a positive blood culture for ESBL and received at least one dose of empiric PTZ or a carbapenem. Patients were excluded if they were continued on PTZ for >24 hours after positive ESBL blood culture result time or if they did not receive a carbapenem as definitive therapy. The primary objective is to analyze hospital mortality during admission in patients with ESBL bacteremia who were empirically treated with PTZ versus a CBP. 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.

RESULTS: Research in progress

CONCLUSION: Research in progress
BACKGROUND: The CDC recognizes antimicrobial resistance as one of the biggest threats to human health worldwide, accounting for more than 8 million additional hospital days and $21 billion to $34 billion annually. Advances in molecular technology have allowed for rapid detection of nucleic acid sequences in select gram-positive and gram-negative bacteria and identification of their resistance markers in approximately 2.5 hours after detection of positive blood cultures. Currently, CHRISTUS Spohn Hospital Corpus Christi – Shoreline uses both Verigene BC-GN and BC-GP Test Systems for rapid identification of bacteria. However, a consistent process of reporting and reviewing the results of Verigene is not presently utilized, which provides an opportunity to fine-tune the process to optimize a technology that is readily available for antibiotic stewardship. Therefore, utilizing the Verigene system with a designated pharmacist to review its results can provide opportunities for broadening coverage or de-escalating antibiotics based on an organism’s resistance markers. In either scenario, patients on targeted antibiotics are likely to decrease their hospital length of stay, particularly in the ICU, which could translate into a potential reduction in hospital costs.

PURPOSE: To evaluate the effectiveness of a designated pharmacist reviewing results of rapid identification of bacteria via the Verigene system in reducing hospital length of stay.

METHODS: Data will be retrospectively collected via MEDITECH from CHRISTUS Spohn Hospital Corpus Christi – Shoreline, a 557-bed, acute care, teaching hospital with a Level II trauma center and 30-bed emergency room. Three arms will be evaluated; (1) the process prior to the utilization of rapid bacterial identification technology with Verigene, (2) the process of using the Verigene system without a dedicated pharmacist and (3) the process with one designated pharmacist reviewing all Verigene results. Patients who are 18 years of age or older with documented bloodstream infections will be included. Patients who are palliative or comfort care, expire before results are available, have contaminated blood cultures or women who are pregnant will be excluded. The primary outcome that will be evaluated is hospital length of stay. Secondary outcomes include mortality rates, ICU length of stay, infection-related readmissions within 30 days, appropriate use of antibiotics, and reduction in drug cost.

RESULTS: Data collection currently in progress.

CONCLUSION: Pending.
XIA – INFECTIOUS DISEASES/HIV

PL XI-1
USE OF PROCALCITONIN IN THE PRESENCE OF FEBRILE NEUTROPENIA IN AUTOLOGOUS BONE MARROW TRANSPLANT PATIENTS. Casey Stauffer, Gerard Gawrys, Methodist Hospital and Methodist Children’s Hospital, San Antonio, TX.

PURPOSE: The use of procalcitonin is commonly used to distinguish infection in patients. The objective of this study is to determine if procalcitonin can be utilized to better identify patients with febrile neutropenia that have an active infection.

METHODS: This study has been approved by the Institutional Review Board. A retrospective chart review will be conducted of patients from April 2014 to September 2017. Patients will be included if they have fevered, have a procalcitonin lab result, are neutropenic, and have received an autologous bone marrow transplant. The following data will be collected: patient age, gender, ethnicity, body surface area, regimen used prior to bone marrow transplant, time of fever from transplant, number of granulocyte-colony stimulating factor doses, days of neutropenia prior to infection, days to engraftment, days post-transplant to infection, remission status, positive cultures, imaging showing infection, signs and symptoms of infection, days of antibiotic therapy, serum creatinine, lactic acid, and lactate dehydrogenase. All data will be recorded without patient identifiers and maintained confidentially. Data collected will be reviewed to determine if procalcitonin can be used to appropriately determine if an infection is occurring in this patient population.

RESULTS: Data collection from January 2014 to September 2017 revealed over two hundred patients meeting the inclusion criteria listed above. Data is currently being gathered and analyzed. Analysis will be completed by March 2017.

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

PL XI-2
THE SPICE OF LIFE: DOES POTENTIAL AMPC PRODUCTION IMPACT CLINICAL OUTCOMES. Charles J. Ulrich III, Matthew P. Crotty, Methodist Dallas Medical Center, Dallas, Texas.

PURPOSE: To compare clinical outcomes between patients treated with standard therapy and non-standard therapy for bloodstream infections due to potential AmpC-producing organisms. Within the Methodist Health System (MHS), bloodstream infections (BSIs) with potential AmpC-producing organisms are often treated using beta-lactams such as third generation cephalosporins and piperacillin-tazobactam based on reported susceptibilities, despite the potential emergence of resistance from increased production of AmpC. Evaluating the impact on clinical outcomes associated with the choice of antimicrobial therapy may highlight opportunities for antimicrobial stewardship, such as appropriate antibacterial selection for definitive therapy.

METHODS: Electronic medical records were reviewed retrospectively for patients admitted within the MHS between January 1, 2013 and August 30, 2017. Patients were included if they were at least 18 years of age and had a positive blood culture with a potential AmpC-producing organism. Patients were excluded if antibiotic duration was less than 24 hours or if data necessary to determine study outcomes was missing.

RESULTS: Data collection and analysis are currently in progress.

CONCLUSION: Data collection and analysis are currently in progress.

PL XI-3
EVALUATE THE APPROPRIATENESS OF CLOSTRIDUM DIFFICILE INFECTION TREATMENT BASED ON INFECTIOUS DISEASE SOCIETY OF AMERICA GUIDELINES AT DOCTORS HOSPITAL AT RENAISSANCE. Sara L Solomon, Jose J Hernandez, Rene Verduzco, Daniela Bazan, Doctors Hospital at Renaissance, Edinburg, TX.

PURPOSE: Infectious Disease Society of America (IDSA) guidelines recommends treating clostridium difficile infection based on patients’ clinical presentation and the severity of illness. In addition, guidelines adherence to treatment can affect patients’ outcomes and disease progression. Therefore, the primary objective was to assess the adherence of clostridium difficile infection treatment to IDSA guidelines at Doctors Hospital at Renaissance by comparing patients’ treatment regimens to IDSA recommended guidelines for treatment

METHODS: Using data retrospectively collected from Doctors Hospital at Renaissance, we analyzed patients who have undergone a PCR clostridium difficile stool test from January 1st, 2017 to October 30th, 2017. Patients included in the study must be 18 years of age or older with clostridium difficile stool test regardless of the results. Patients already on clostridium difficile treatment when admitted were excluded.

RESULTS: In Progress

CONCLUSION: In progress

PL XI-4
STANDARD VS ALTERNATIVE THERAPY FOR STENOTROPHOMONAS MALTOPHILIA INFECTIONS: FOCUS ON TRIMETHOPRIM-SULFAMETHOXAZOLE, MINOCYCLINE, AND MOXIFLOXACIN MONOTHERAPY. 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 compare and assess the efficacy of trimethoprim-sulfamethoxazole (TMP-SMX) against alternative agents such as moxifloxacin and minocycline for treatment of S. maltophilia infections

METHODS: This was a single-center, retrospective chart review with a timeline of January 2006 – September 2017. Study subjects were screened and selected by cross-referencing patients billed for any of these three agents with those who had isolated S. maltophilia in culture. Patients ≥ 18 years of age were included if they had isolated at least one positive culture for S. maltophilia and received treatment with any of the three agents of interest as
monotherapy for at least 5 days. Patients were excluded if they were pregnant, were incarcerated, had cystic fibrosis, received concurrent antimicrobial therapy with activity against S. maltophilia, or had isolated this organism in previous cultures. Only the first incidence of S. maltophilia infection for each patient was included in the analysis. Complete success was defined as meeting all three of the following criteria: 1) resolution of signs/symptoms of infection, 2) no repeat isolation of S. maltophilia within 30 days of end of therapy, and 3) no receipt of additional antibiotics with in-vitro activity against S. maltophilia. Partial success was defined as meeting at least two of the three above criteria. Secondary outcomes included in-hospital mortality, 30-day mortality, length of hospital stay (LOS), development of resistance, development of adverse effects, and influence of baseline characteristics on clinical success.

RESULTS: A total of 109 patients were included in this study. 37 patients received minocycline, 40 received moxifloxacin, and 32 received TMP-SMX. Complete clinical success was seen in 47/109 (43%) patients. No statistically significant difference in achievement of complete clinical success between all three of the groups was identified: minocycline 17/37 (45.9%) vs moxifloxacin 16/40 (40%) vs TMP-SMX 14/32 (43.7%), p = 0.8674. When including patients that achieved partial clinical success, there was still no statistically significant difference between groups: minocycline 35/37 (94.6%) vs moxifloxacin 34/40 (85%) vs TMP-SMX 29/32 (90.6%), with p = 0.3724. Use of moxifloxacin was associated with significantly longer length of stay in overall hospitalization (p = 0.0340) as well as in the intensive care unit (p = 0.0114). Development of moxifloxacin resistance within 30 days post-treatment was also significantly more common vs the other agents (p = 0.0258). There was no difference in in-hospital mortality, number of days in intensive care, nor total duration of therapy.

CONCLUSION: Rate of clinical success was found to be similar in patients who received either minocycline, moxifloxacin, or TMP-SMX. However, use of moxifloxacin was associated with longer LOS and increased resistance development. Applicability to general population may be limited due to the low number of patients included in the study.

PL XI-5
EVALUATION OF A PHARMACIST-DRIVEN ALLERGY ASSESSMENT SERVICE ON EXPOSURE TO NON-PREFERRED ANTIBIOTICS IN PATIENTS WITH A DOCUMENTED BETA-LACTAM ALLERGY. Brittany Monene, Vu Ta, Wyley McCoy, Amy Martin, CHRISTUS Trinity Mother Frances Health System, Tyler, Texas.

Purpose: To determine whether implementation of a pharmacist-driven allergy assessment service is associated with a reduction in the utilization of non-preferred antibiotics as compared to standard of care.

Methods: This is a prospective cohort with retrospective control study, including adult patients with documented beta-lactam allergies who received antibiotic therapy. The intervention consists of a patient interview, allergy assessment, and recommendation made to physicians to modify antibiotic therapy if a non-significant beta-lactam allergy is present, based on a medical staff-approved standardized pathway. Patients unable to be interviewed were excluded. The primary outcome is days-of-therapy (DOT) of non-preferred antibiotic agents in the intervention group compared to historical control. Secondary endpoints include: prevalence of misclassified beta-lactam allergies, prevalence of non-preferred antibiotics, antimicrobial regimen revision rate, and safety in patients with therapy revised.

Results: Data collection is ongoing.

Conclusion: Based on interim data, a pharmacist-driven allergy assessment intervention can decrease the rate of non-preferred antibiotic use.

PL XI-6
IMPROVING THE APPROPRIATENESS OF PRE-OPERATIVE ANTIBIOTIC PROPHYLAXIS IN PATIENTS UNDERGOING PROCEDURES BY INTERVENTIONAL RADIOLOGY AT A COMPREHENSIVE CANCER CENTER. Patrick J. Hoheisel, Katherine E. Cain, Claire A. Marten, The University of Texas MD Anderson Cancer Center, Houston TX.

Purpose: Infectious complications from interventional radiology procedures can increase patient morbidity and mortality. Successful prevention begins at the pre-procedural evaluation where prophylactic antibiotics are selected and administered. Prophylactic ciprofloxacin or ceftiraxone is routinely administered before percutaneous nephrostomy (PCN) tube placement and exchange at our institution. However, per guideline recommendations intravenous ciprofloxacin requires a 60-minute infusion time and should be given 60-120 minutes before incision which requires adequate patient preparation and coordination of care. The purpose of the study is to improve the timing and utilization of prophylactic ciprofloxacin to prevent infectious complications in patients undergoing PCN tube placement and exchange.

Methods: A retrospective, single center, cohort study evaluated the administration of pre-operative antibiotic prophylaxis in patients already on systemic antibiotics who received PCN tube placement or exchange. Pre-intervention data was collected from April 2016 - May 2017 and post-intervention data will be collected from December 2017 - February 2018. Intervention efforts focused on standardizing ciprofloxacin administration instructions. Verbal and written education was provided to physicians, midlevel providers and nurses.

Results: Eighty-six unique patient encounters of ciprofloxacin administration were included in the pre-intervention group. Per guideline criteria, 18.6% (n=16) of ciprofloxacin doses were administered appropriately 60-120 minute prior to PCN exchange and placement, indicating that over 80% of doses were administered inappropriately. Post-intervention data is in progress.

Conclusion: The appropriate administration of prophylactic antibiotics is important in the prevention of post-operative infection. Our aim is to improve the administration practices of ciprofloxacin by 50% post educational intervention.
UTILIZATION OF A CLINICAL DECISION TREE TO PREDICT EXTENDED-SPECTRUM BETA-LACTAMASE PRODUCING ORGANISMS IN BACTEREMIC PATIENTS AT A VETERAN AFFAIRS TEACHING HOSPITAL. DeMaurian Mitchner, Feibi Chi, Andrew Hunter, Andrew Chou, Michael E. DeBakey Veterans Affairs Medical Center, Houston, Texas.

PURPOSE: Infections with extended-spectrum beta-lactamase (ESBL) producing organisms are associated with higher mortality rates, longer hospitalizations, and reduced rates of clinical and microbiological response when compared to infections with other gram-negative bacteria. The primary objective of this study is to validate the utilization of a clinical decision tree in predicting if patients have bacteremia due to an ESBL-producing organism. Secondary objectives will assess the appropriateness of clinician chosen antibiotic regimen in the emergency department prior to confirmation ESBL bacteremia and the appropriateness of clinician chosen antibiotic regimen by the admitting primary team prior to confirmation ESBL bacteremia.

METHODS: A retrospective chart review of adult patients with a positive blood culture of *Enterobacteriaceae* at the Michael E. DeBakey Veterans Affairs Medical Center between 01/01/2016 and 12/31/2016 will be conducted. Patients will be identified through microbiology reports using TheraDoc©. All patient data will be collected through the use of the institution’s computerized patient record system. The following demographic and microbiology data will be collected: age, sex, weight, height, history of ESBL-producing *Enterobacteriaceae* in the past 6 months, history of multi-drug resistant organisms in the last 6 months, use of chronic indwelling vascular hardware, previous antibiotic use in the last 6 months, hospitalization in an ESBL high-burden region in the last 6 months, initial antibiotic drug regimen, any antibiotic drug regimen changes, and source of infection. Simple descriptive statistics will be used to describe primary and secondary objective outcomes.

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

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

XIB – INFECTIOUS DISEASES/HIV

PL XI-8
PROBIOTICS FOR THE PREVENTION OF ANTIBiotic ASSOCIATED CLOSTRIDIUM DIFFICILE INFECTIONS. Joshua Sanchez, Amber Elliott, Luke Barnett, Sheryl Williams, Baptist St. Anthony’s Hospital, Amarillo, TX.

PURPOSE: To evaluate the incidence of hospital acquired Clostridium difficile infections after the implementation of a pharmacist driven probiotic protocol. This protocol was initiated in all hospitalist patients that had orders for systemic antibiotics.

METHODS: Using clinical trial data supporting probiotic strains as CDI prevention, a probiotic product was selected and purchased for this project. A protocol was created and distributed to pharmacist and hospitalists. Per the protocol, all hospitalist orders for systemic antibiotics would require pharmacists to enter an order for the protocol probiotic, Ultimate Flora 30 billion CFU. The protocol was implemented for 3 months. Hospital acquired C. diff rates were collected for those 3 months and then compared to rates for the previous 2 years, looking only at hospitalist patients.

RESULTS: Using computer order searches for all systemic antibiotics, a total of 2,425 patients were identified as hospitalist patients that received a systemic antibiotic during the study period. The total number of patients that were provided the protocol probiotic was 422. In the three month span of the study, only 2 cases of hospital acquired C. diff were reported. Compared to 2016 there was an overall reduction in C. diff rate per month from 8.7 patient per month down to 6.9 patients per month in 2017. The rate looking only at the three months of the study was reduced from 1.67 patients per month in 2016 to 0.67 patients per month in 2017. Patients during the study period were less likely to have a C. diff infection compared to the previous year. Due to the small window of time the protocol was tested, it is hard to make a direct correlation to the probiotic use and the incidence of C. diff infections.

CONCLUSION: Based on 3 months data, implementation of a probiotic protocol may contribute to lower incidence of hospital acquired C. diff infections in patients seen by a hospitalist, that are started on systemic antibiotics.

PL XI-9
CLINICAL AND ECONOMIC IMPACT OF RAPID BLOOD CULTURE IDENTIFICATION WITH REAL-TIME ANTIMICROBIAL STEWARDSHIP IN PATIENTS WITH STAPHYLOCOCCUS AUREUS AND ENTEROCOCCUS SPP. BACTEREMIA AT A LARGE ACADEMIC MEDICAL CENTER. Jessica Hirase; Hannah Russo; Kady Phe. CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: The initiation of appropriate antimicrobial therapy is dependent on timely identification of the pathogen. The FilmArray Blood Culture Identification Panel (BCID) is a rapid, multiplex polymerase chain reaction (PCR) panel that identifies 24 pathogens along with three antibiotic resistance genes associated with bloodstream infections within one hour of growth. The purpose of this study was to compare the clinical and economic impact of rapid BCID testing versus standard blood culture processing, both coupled with real-time antimicrobial stewardship, in patients with *Staphylococcus aureus* and *Enterococcus* spp. bacteremia.

METHODS: This was a single center, retrospective chart review conducted as a pre-post intervention quasi-experimental study. The pre-intervention group included adult patients with *Staphylococcus aureus* and *Enterococcus* spp. bacteremia identified by standard blood culture processing and the post-intervention group included those identified by rapid BCID testing. Both arms included real-time antimicrobial stewardship. The primary endpoint was time from positive Gram stain call to physician to initiation of optimal antimicrobial therapy (defined as vancomycin, linezolid, daptomycin, or ceftaroline for MRSA bacteremia; nafcillin or cefazolin for MSSA bacteremia; daptomycin or linezolid for VRE bacteremia; vancomycin or ampicillin (if susceptible) for VSE bacteremia). Secondary endpoints included time to active therapy (defined as an antimicrobial to which the organism was susceptible), time to
Identification of pathogen, length of hospital stay after positive culture, 30-day mortality, and time to optimal therapy in MRSA, MSSA, VRE, and VSE bacteremia.

**RESULTS:** A total of 132 patients were included in this study. The mean time to optimal therapy decreased from 21.4 hours to 10.7 hours after implementation of BCID testing ($P = 0.048$). Time to identification of the pathogen decreased from 75.6 hours to 2.7 hours after implementation of BCID testing ($P < 0.001$). An analysis was conducted for time to optimal therapy for each pathogen and results demonstrated that time to optimal therapy was significantly shorter for Post-BCID patients with MSSA and VRE bacteremia. For patients with MSSA bacteremia, time to optimal therapy decreased from 59.2 to 25.8 hours ($P < 0.001$). For patients with VRE bacteremia, time to optimal therapy decreased from 24.6 to 5.6 hours ($P = 0.005$). Groups did not differ in time to active therapy, length of stay, nor 30-day mortality. Economic analysis is pending.

**CONCLUSION:** Rapid BCID testing significantly decreased time to optimal therapy in patients with Staphylococcus aureus and Enterococcus spp. bacteremia, specifically in patients with MSSA and VRE bacteremia. Rapid BCID testing also decreased time to identification of the pathogen.

**PL XI-10**

**ANALYSIS OF MULTIDRUG-RESISTANT PSEUDOMONAS AERUGINOSA MANAGEMENT AT BAPTIST HEALTH SYSTEM.** Kyle O. Starling, Kevin Purcell, Baptist Health System, San Antonio, TX.

**Background:** There are ~100 isolates per year of multidrug-resistant (MDR) Pseudomonas aeruginosa at Baptist Health System. However, consumption of drugs like ceftriaxone-tazobactam, ceftazidime-avibactam, amikacin, and colistin are comparatively low.

**Objective:** The purpose of this study is to evaluate the treatment of patients with MDR pseudomonas infections.

**Methods:** The microbiology laboratory reported 77 isolates of MDR pseudomonas during the period from 9/1/2016 to 8/10/2017. Isolates were excluded if there was insufficient documentation to evaluate drug use and management. There were 63 isolates included in the study and a chart review of each isolate was performed.

**Results:** Over half (52%) of the isolates were from patients with healthcare exposure. Antibiotics were switched based on sensitivities less than 24 hour from culture results. Infectious Disease consults were placed in 71% of cases. Average length of empiric therapy was 5 days. Double antibiotic coverage was used in 24% of isolates, most commonly inhaled and systemic antibiotics. Further de-escalation would have been feasible in 37% of cases. Of the isolates, 5% never received definitive therapy with a susceptible antibiotic. The mortality rate was 5%.

**Conclusion:** While the overall management of these infections was acceptable, there is still an opportunity for improvement from an antimicrobial stewardship standpoint. About one-third of isolates could have been de-escalated. The aminoglycosides have the highest sensitivities, but the lowest utilization at Baptist Health System. It may be beneficial to re-examine the role of these drugs in the treatment of MDR pseudomonas infections.

**TREATMENT OF METHICILLIN-SUSCEPTIBLE STAPHYLOCOCCUS AUREUS (MSSA) BACTEREMIA AT BAPTIST HEALTH SYSTEM (BHS).** Gabrielle Uzzell, Kevin Purcell, Baptist Health System, San Antonio, TX.

**Background:** Cefazolin and oxacillin are the drugs of choice in treating MSSA bacteremia. A phenomenon called the inoculum effect may cause cefazolin treatment failure. Also, clindamycin and erythromycin resistance in MSSA isolates has been hypothesized as a potential indicator of cefazolin treatment failure.

**Objective:** To assess the effectiveness and quality of treatment in patients with MSSA bacteremia at BHS.

**Methods:** A retrospective evaluation was done of patients with a positive blood culture for MSSA between September 21, 2016 and July 17, 2017 across 5 hospitals within BHS. Data on additional infections, clindamycin and erythromycin sensitivity, initial and final antibiotics, whether or not an infectious disease consult was obtained, and clinical outcome were collected from the electronic medical record.

**Results:** A total of 65 patients with MSSA bacteremia were identified and 48 (74%) recovered. For definitive therapy, 28 patients (43%) were on cefazolin, 18 (28%) on vancomycin, and 10 (15%) on oxacillin. Of those on cefazolin, 26 (93%) recovered. Of those on oxacillin and vancomycin, 8 (80%) and 9 (50%) recovered, respectively. Of the MSSA isolates from the 28 patients that received cefazolin, 25 (89%) were sensitive to clindamycin and 20 (71%) were sensitive to erythromycin. Only 3 of these patients had isolates that were resistant to both, 2 recovered and 1 is unknown.

**Conclusions:** Cefazolin may be a better choice than oxacillin for MSSA bacteremia at BHS. The presence of resistance to both erythromycin and clindamycin as a potential indicator of cefazolin treatment failure needs to be further evaluated.

**PL XI-12**

**EVALUATING THE IMPACT OF PROCALCITONIN ON ANTIBiotic UTILIZATION IN COPD EXACERBATIONS.** Kevin Lin, Casey Dempsey, Shivani Patel, Memorial Hermann Southwest Hospital, Houston, TX.

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

**METHODS:** We conducted a retrospective, pre- and post-intervention study evaluating the impact of a PCT-guided protocol on antibiotic utilization in COPD exacerbations. Patients with a primary diagnosis of COPD exacerbation, at least 18 years of age, who had a PCT level drawn within 24 hours of admission were included. Exclusion criteria included patients presenting with severe trauma, sepsis, bacterial pneumonia, patients who required invasive mechanical ventilation, and patients with an initial admission to the ICU. Data collection variables included baseline characteristics, laboratory values, vital signs,
microbiology cultures and sensitivities, and antibiotic use data. The primary outcome of this study was antimicrobial days of therapy. Days of therapy is defined as a count of the number of individual antimicrobial agents given to a patient on each calendar day. Secondary outcomes include hospital length of stay (LOS), respiratory-related 30-day readmission rates, and treatment failure defined as ICU admission, requirement of invasive mechanical ventilation, or death.

**RESULTS:** A total of 255 patients were reviewed with 139 fitting the inclusion criteria. There were a total of 64 and 75 patients in the pre- and post-intervention cohorts, respectively. PCT guidance was associated with a significant reduction in number of antibiotic days of therapy (9.4 days vs. 2.4 days; P=0.0003). No differences were found in hospital LOS (5.3 days vs. 4.9 days; P=0.08) nor respiratory-related 30-day readmissions (9.4% vs 10.7%; P=0.8). In addition, treatment failure defined as ICU admission (3.1% vs 0%; P=0.21), requirement for invasive mechanical ventilation (3.1% vs 0%; P=0.21), or death (1.6% vs 0%; P=0.46) did not differ significantly between groups.

**CONCLUSION:** Implementation of a PCT-guided protocol for the treatment of COPD exacerbations was associated with a significant reduction in antimicrobial days of therapy. No differences were noted in hospital LOS, respiratory-related 30-day readmissions, and treatment failure defined as ICU admission, requirement of invasive mechanical ventilation, or death. Our PCT-guided protocol has been demonstrated to safely reduce unnecessary antibiotic utilization in patients with COPD exacerbations.

**PL XI-13**

**QUALITY IMPROVEMENT GAP ANALYSIS OF ANTIBIOTIC USE IN PEDIATRIC PATIENTS WITH COMMUNITY ACQUIRED PNEUMONIA.** Helen Leung, Shannan K. Eades, Weng Man Lam, Michael L. Chang, MD; Children’s Memorial Hermann Hospital, Houston, TX.

**PURPOSE:** To assess pediatric medical residents’ utilization rate of the pediatric community acquired pneumonia (CAP) order set. The overall goal of this project is to increase the CAP order set utilization to 80% in order to optimize antibiotic prescribing for the treatment of pediatric CAP.

**METHODS:** This project observes a pre- and post-intervention cohort. A survey was conducted prior to interventions to assess pediatric residents’ baseline knowledge of CAP and the order set. The primary study intervention includes an education session for pediatric medicine residents reviewing pediatric CAP and the CAP order set. Secondary interventions include posting educational flyers on team work stations, in the resident lounge, in the employee restrooms, and distributing the flyer during rounds.

**RESULTS:** Surveys completed by pediatric medical residents (N=55) indicate that only 20% of residents have knowledge of the pediatric CAP order set. About 40% of pediatric medical residents have the misconception that all patients admitted to the hospital for CAP are complicated.

In the baseline patient cohort (N=43), the CAP order set was used in 14% of cases and narrow-spectrum antibiotics were prescribed as initial therapy in 26% of patients. Only 40% of patients were discharged home on narrow-spectrum antibiotics.

**CONCLUSION:** Post-intervention data collection is ongoing. Post-intervention data will be compared to pre-intervention data to determine effectiveness of prescriber-directed education and secondary interventions.

**PL XI-14**

**IMPACT OF PHARMACIST-DELIVERED TELEPHONE EDUCATION TO PATIENTS DISCHARGED ON RIVAROXABAN AND SUBSEQUENT ER VISITS.** Lauren M. Bailey, Adriana Montemayor, Cesar Munoz, Goldina Erowele, Abel Davila, Harris Health System, Houston, TX.

**PURPOSE:** To determine the impact of a pharmacist-delivered post-hospital discharge telephone education pilot program on bleeding events in patients prescribed rivaroxaban. Post discharge telephone education began system-wide on May 1, 2017 and was implemented to promote rivaroxaban compliance and reinforce important medication safety information.

**METHODS:** Using a list of patients who were discharged from our system’s hospitals on rivaroxaban from May 1, 2017 to November 2, 2017, we identified patients who had received telephone education by a pharmacist and those who did not receive telephone education by a pharmacist, and categorized them into two groups: educated and not educated. Pre and post discharge bleeding events for both groups were first identified using a search query of bleeding diagnoses for emergency and inpatient hospital admissions to Ben Taub, Lyndon B. Johnson, and Quentin Mease General Hospitals. To identify post-discharge bleeding events from the query, a retrospective chart review was performed using our system’s electronic medical record. A two-sample t-test will be performed to compare readmission data between the two groups.

**RESULTS:** Of the 326 patients who were discharged from Harris Health System hospitals on rivaroxaban from May 1, 2017 to November 2, 2017, 126 (39%) patients received telephone education by a pharmacist and 200 (61%) did not receive telephone education. Reasons for lack of follow up include: unable to reach via phone, invalid phone number, or rivaroxaban was discontinued prior to call. The number of subsequent hospitalizations with an associated diagnosis of bleeding in these patients is in the process of being validated.

**CONCLUSION:** Data summary and evaluation will focus on rate of hospital readmission with an associated diagnosis of bleeding comparing rates for patients who did not receive education to patients who did receive post-discharge education.

**PL XI-15**

**IMPACT OF DISPENSING DISCHARGE MEDICATIONS TO PATIENTS WITH HEART FAILURE, ACUTE MYOCARDIAL INFARCTION, OR CHRONIC OBSTRUCTIVE PULMONARY DISEASE EXACERBATION: EFFECT ON 30-DAY ALL-CAUSE READMISSION RATES.** Kajia Zheng, Charlotte Farris, Sarah Westbrook, Alejandra Ibarra, Scott and White Medical Center – Temple, Temple, TX.
PURPOSE: A key aspect of improving outcomes in patients with heart failure, acute myocardial infarction, and chronic obstructive pulmonary disease (COPD) is ensuring medication adherence. One proposed method to increase medication adherence and decrease readmission rates is to dispense medications to patients on hospital discharge. The purpose of this study is to determine the impact of providing discharge medications for patients with heart failure, acute myocardial infarction, or COPD on all-cause 30-day readmissions.

METHODS: A retrospective chart review was completed for patients admitted for a heart failure exacerbation, acute myocardial infarction, or COPD exacerbation receiving their discharge medications through the Scott and White outpatient pharmacy bedside delivery service. The primary outcome was all-cause 30-day readmission rate of studied patients. Secondary outcomes included: all-cause 30-day readmission rates for each individual condition - heart failure exacerbation, acute myocardial dysfunction, and COPD exacerbation.

RESULTS: 8,348 patients who received bedside medication delivery through the Scott and White outpatient pharmacy were reviewed. A total of 229 patient encounters met inclusion and exclusion criteria and were included in the study. The all-cause 30-day readmission rate was 26.64%. All-cause 30-day readmission rates were 27.91% (24/86) for patients with heart failure exacerbation, 23.29% (17/73) for patients with acute myocardial infarction, and 28.57% (20/70) for patients with COPD exacerbation.

CONCLUSION: This study did not show a decrease of all-cause 30-day readmission rates in patients with heart failure exacerbation, acute myocardial infarction, or COPD exacerbation who received bedside medication delivery through the Scott and White outpatient pharmacy. Further studies are needed to elucidate benefits of providing bedside medication delivery on 30-day readmission rates.

PL XI-16
THE IMPACT OF AMBULATORY CARE PHARMACIST-LED TRANSITIONS OF CARE SERVICES ON HOSPITAL READMISSION RATES. Kathleen Eddy, Krista Heinrich, Amulya Tatachar, Baylor Health Enterprises Community Pharmacy Residency; Dallas, Texas.

Purpose: It is imperative to decrease preventable hospital readmission rates to improve patient quality of life and avoid financial penalties for institutions. The financial burden for one uninsured patient is approximately $10,100 per hospital admission. A recent study published by the Journal of the American Pharmacists Association estimates 26% of readmissions were potentially preventable and medication-related. It has been consistently demonstrated that pharmacy-based transitions of care interventions, including post-discharge medication reconciliation and education, have been correlated with reduced hospital readmissions and cost savings. As the drug experts, pharmacists are in the perfect position to assess medication-related issues such as inappropriate prescribing, inconsistencies between hospital and outpatient regimens, adherence and adverse events. Baylor Scott & White Health (BSWH) piloted a pharmacist-led transitions of care program at the outpatient charity clinics in August 2016. The workflow was enhanced in August 2017 and integrates transitions of care follow-ups to optimize continuity of care for uninsured or underinsured patients discharged from BSWH hospitals in North Texas. The goal of this study is to observe how pharmacists within these clinics impact 30-day all-cause hospital readmission rates after the implementation of a transitions of care program.

Methods: This is a retrospective study which assessed the impact of pharmacist-managed transitions of care services at Baylor Scott & White outpatient charity clinics from November 1, 2017 through March 1, 2018. All patients that are at least 18 years of age, diagnosed with at least one chronic disease, and taking at least two prescription medications were included in the study. Patients discharged to hospice, nursing homes or assisted living facilities were excluded. Patient care navigators alerted the pharmacy team to provide transitions of care services for patients recently discharged from the hospital. Patients were contacted telephonically or face-to-face by a member of the pharmacy team within 72 hours, 14-days, and 30-days of hospital discharge. Pharmacists conducted medication reconciliation, medication management, and medication education services during these visits. Data collection included 30-day hospital readmission rates, 30-day emergency department visits, and interventions made by the pharmacy team.

Results: Data collection is pending.

Conclusion: Several well-documented studies have illustrated the benefits of the pharmacist’s role in providing transitions of care services. This pharmacist-led transitions of care program further reinforces the significance of ambulatory care pharmacist involvement in preventing hospital readmissions and emergency room visits.

PL XI-17
PHARMACIST-DIRECTED POST-ACUTE TRANSITION OF CARE TO DECREASE READMISSION RATES FOR HIGH RISK PATIENTS. Chelsea Garcia, Travis J. Freeze, T. Ross Clark, Lt. Kenneth Stearns, Jonathan K. Willett, Chickasaw Nation Medical Center, Ada, OK.

Purpose: To assess pharmacist post-discharge influence on readmission rates for specified high risk patients, analyze gaps in discharge education and counseling, and justify the need for a full-time transition of care pharmacist.

Methods: Comparing data between historical readmission rates, for the preceding 12 months from the beginning of this study, of patients with similar risk factors with the current standard pharmacist intervention and transition of care and the intervention group that has a follow-up appointment with the pharmacist on 8th day after hospital discharge with current protocol of pharmacist education, and another appointment at 31st day post-discharge to identify and resolve health-related and medication factors to decrease preventable hospital readmissions.

Results: An analysis was performed of the current data for 34 patients. Four patients have had a readmission, 7 patients have had a visit to the Emergency Department.

Conclusion: Based on the available data, having a pharmacist dedicated to transition of care reduces readmission rates and medical errors for high risk patients.

PL XI-18
THE IMPACT OF PHARMACY TEAM INVOLVEMENT ON READMISSION DUE TO
MEDICATION RELATED EVENTS. Heather Savage, Monica Morgan, Nicole Fabré-Lacoste, Ochsner Medical Center, New Orleans, Louisiana.

Purpose: The pharmacy team is in the ideal position to take responsibility for the medication use process throughout different transitions of patient care. It has been shown that pharmacists obtain more accurate medication-related information, than both physicians and nurses. Additionally, there is evidence to support pharmacy team involvement in patient care reducing errors in the medication use process. Studies show that the pharmacy team is able to make impactful changes on patient care and readmissions. This study aims to determine if pharmacy team involvement in patient care has an effect on readmission rates due to drug related problems when compared to no pharmacy team involvement.

Methods: Single-center, retrospective, cohort study comparing readmissions between patients who had a member of the pharmacy team involved in their care to those who did not. Readmissions from December 1, 2016 thru October 31, 2017 were included. Secondary outcomes include the type of pharmacy team intervention (medication reconciliation, pharmacy consult, medication counseling, discharge counseling and clinical pharmacist as a member of the primary team), classification of drug related problems based on the PCNE classification system (C-codes) and readmission within 30, 60 and 90 days.

Results: In progress

Conclusion: In progress

PL XI-19
THE IMPACT OF BEDSIDE MEDICATION DELIVERY ON HOSPITAL CONSUMER ASSESSMENT OF HEALTHCARE PROVIDERS AND SYSTEMS (HCAHPS) SURVEYS. Brandi K. Dahl, Krystal K. Haase, Maegan M. Whitworth, Neely C. Hudson, Texas Tech University School of Pharmacy, Amarillo, TX.

BACKGROUND: The Patient Protection and Affordable Care Act (PPACA) established the Hospital Value-Based Purchasing (VBP) program in 2010 to financially incentivize hospitals to improve quality and efficiency of care. Bedside medication delivery (BMD) is an emerging pharmacy service with potential benefit on VBP. Modest decreases in readmissions and improved post-discharge medication adherence were found in transition-of-care studies describing BMD as part of the intervention. However, the specific benefits of BMD are not well described. We hypothesize that BMD may improve patient satisfaction in addition to adherence and readmission rates.

PURPOSE: The primary aim of this study is to determine if utilization of a BMD service at discharge improves patient satisfaction based on global and domain-specific scores on Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys. Secondary aims include characterizing factors that affect utilization of the BMD service and the BMD process. Primary and secondary outcomes will provide valuable information on a pharmacy service that may impact the patient experience and allow for optimization of discharge services within a health system.

METHODS: This is a retrospective cohort study of adult subjects discharged from Northwest Texas Healthcare System (NWTHS) in Amarillo, Texas between July 1, 2017 and December 31, 2017. The BMD utilization cohort was identified from reports generated by the outpatient pharmacy, CentRx, located within NWTHS and cross-referenced with existing Press Ganey survey completion data. The control cohort was established in a 4:1 ratio from subjects who completed an HCAHPS survey but did not use the BMD service. Patient characteristics, including payer status, primary diagnosis, comorbidities, discharge unit, length of stay, post-discharge fill rates, and readmission status will be collected from manual review of medical records. Utilization and process characteristics will also be collected manually. Demographic information and baseline characteristics will be presented using descriptive statistics. Categorical variables will be analyzed using either chi-square or Fisher’s exact test as appropriate. Continuous data between groups will be compared using the Student’s T-test.

RESULTS/CONCLUSION: Data collection and analysis are currently in progress. Preliminary results will be presented.

XIIA – INTERNAL MEDICINE/PHARMACOTHERAPY

PL XII-1
AN EVALUATION OF INTERPROFESSIONAL NAVIGATION SERVICES IN HIGH UTILIZERS AT A COUNTY TERTIARY TEACHING HEALTH SYSTEM. Taylor Horyna, Charles F. Seifert, Rosalinda Jimenez, Dolores Buscemi, Barbie Taylor, Paul Fowler, Linda McMurray. Texas Tech University Health Sciences Center School of Pharmacy, Lubbock, TX.

PURPOSE: To determine if an interprofessional navigation program will decrease hospital utilization (emergency department (ED) and hospital admissions) in high utilizers, thus, justifying the need for patient navigation programs to be implemented in other healthcare settings.

METHODS: Patients who are enrolled in the TTUHSC Patient Navigation Program between the dates of July 2, 2014 and September 30 2016 will be included in the study. The institution’s electronic records were searched for all hospital-based utilization, including a composite of ED visits, hospital admissions, and 30 day hospital readmissions prior to enrollment in the navigation program and after enrollment.

RESULTS: A pre-analysis of 100 patients will be conducted to determine if utilization is decreased in previously high-utilizers once they are enrolled into the patient navigation program.

CONCLUSION: In this particular study, we will compare hospital utilization prior to enrollment in the patient navigation program with utilization after enrollment. The existing literature has not specifically examined utilization in the elderly, rural, and diverse population that we are looking at in this study. The results of this study will be used to determine the value and validity of patient navigator use in the health system.

PL XII-2
EVALUATION OF APIXABAN USE IN PATIENTS WITH RENAL DYSFUNCTION FOR VENOUS THROMBOEMBOLISM AND ATRIAL
FIBRILLATION. Pamela Carter, Khushbu Patel, Michael McMillan, JPS Health Network, Fort Worth, TX.

PURPOSE: Apixaban has been proven to demonstrate similar or superior efficacy when compared to other anticoagulants to prevent stroke in patients with atrial fibrillation and to treat venous thromboembolism (VTE). However, currently published clinical trials excluded patients with renal dysfunction. The use of apixaban is continuing to increase in patients with renal dysfunction despite this gap in literature. The purpose of this study is to evaluate the bleeding risk in patients on apixaban with a creatinine clearance (CrCl) ≤ 30 mL/min or those requiring hemodialysis.

METHODS: This study involved a retrospective chart review of patients who were on apixaban and had renal dysfunction (CrCl ≤ 30 mL/min or required hemodialysis). Adult patients treated from November 2015 to September 2017 were included if they were taking apixaban, had renal dysfunction and had a history of or current atrial fibrillation or VTE. The primary objective measured the incidence of major bleeding as described by the International Society of Thrombosis and Haemostasis, clinically relevant non-major bleeding or any bleeding regardless of severity within 6 months. Data was analyzed using descriptive statistics, chi-square test and multivariate analysis as appropriate.

RESULTS: Results are currently in progress.

CONCLUSIONS: To be determined.

PL XII-3
EFFECT OF DAILY LOW-DOSE VITAMIN K SUPPLEMENTATION ON INTERNATIONAL NORMALIZED RATIO (INR) STABILITY IN PATIENTS TAKING WARFARIN. Hannah Ehrenfeld, Delaney Ivy, Megan Roberts, Aimee Nguyen, Linda Chen, Brianne Sorunke, Scott & White Medical Center - Temple, Temple, TX.

Introduction: Oral anticoagulation is indicated in the primary and secondary prevention of arterial and venous thromboembolism. Even with the advent of direct oral anticoagulants (DOACs), vitamin K antagonists (VKAs) are still widely used as means of anticoagulation for these indications. Several drawbacks exist with vitamin K antagonists though including: a narrow therapeutic index, large inter- and intrapatient variability in response, the requirement for frequent monitoring, and many drug-drug interactions. Depending on the specific indication for anticoagulation, individual patients will have an INR goal (typically 2.0-3.0). Despite the frequent monitoring with VKAs, INR is within the specified therapeutic range only 60% of the time. Means to improve anticoagulant control and INR stability should, in theory, reduce the adverse effects seen with both under- and over-coagulation.

A current theory exists stating patients with low baseline vitamin K stores experience greater magnitudes of INR fluctuation with altered intake of vitamin K. To this end, the theory postulates a low-dose daily vitamin K supplementation would establish a baseline pool of vitamin K in the body, so subsequent changes in vitamin K intake would have a reduced magnitude of effect on INR. To date, only a handful of studies evaluate the use of daily vitamin K supplementation on improved INR stability and increased TTR. What’s more, the 2012 CHEST guidelines recommend against the use of vitamin K supplementation in patients anticoagulated on a VKA (Grade 2C). Of the studies on this topic, each attempt to isolate a patient population that may benefit from this supplementation, but there are no current criteria for determining which patients should receive vitamin K supplementation while being anticoagulated with a VKA. The objective of this study was to determine if concomitant use of daily vitamin K supplementation with warfarin results in an increased time in therapeutic range and subsequently improved INR stability.

Method: Having obtained Institutional Review Board approval, this retrospective review was conducted on patients anticoagulated with warfarin, with or without daily vitamin K supplementation at regional Baylor Scott and White anticoagulation clinics. Inclusion criteria were as follows: patients at least 18 years of age, ICD-9 or ICD-10 code indicating need for chronic anticoagulation with warfarin, and patients taking warfarin or warfarin plus vitamin K supplement for > 6 months. Data collected will include: Indication for warfarin, weekly dose, age, sex, BMI, goal INR, TTR calculated via the Rosenaal method, and daily dose of vitamin K. The primary endpoint is the difference in TTR between the supplemented and unsupplemented cohorts. The secondary endpoint was the incidence of major bleeding or thrombotic events. Additionally, descriptive statistics will be provided of patients experienced increased TTR from daily vitamin K supplementation (if applicable).

Results: The preliminary results will be presented, specifically time in TTR differences between the two groups. Data collection is on-going.

Conclusion: Unable to make a conclusion at present.
PL XII-4
RETROSPECTIVE ANALYSIS OF ASPIRIN VERSUS NON-ASPIRIN THERAPY FOR THE PREVENTION OF VENOUS THROMBOEMBOLISM IN PATIENTS WHO HAVE UNGERGONE A TOTAL HIP OR KNEE ARTHROPLASTY. Nicole Dominguez, Annie Hong, Brette McDonald, Jerry D. Smith, Sebastian Perez, Scott & White Medical Center, Temple, TX.

Purpose: Over 700,000 individuals receive a total hip arthroplasty (THA) or total knee arthroplasty (TKA) in the United States each year. A major complication associated with THAs and TKAs is venous thromboembolism (VTE). The risk of post-surgical VTE can be mitigated with the use of chemoprophylactic agents; however, there is currently no consensus on what specific agent should be used. The primary objective of this study is to compare aspirin versus non-aspirin therapy for VTE prevention in patients who have undergone a recent THA or TKA.

Methods: This is a retrospective study that will provide information on the difference between aspirin and non-aspirin therapy for VTE prevention after orthopedic surgery. Patients included were those diagnosed with a VTE within 6 weeks of having a THA or TKA and were prescribed either aspirin or non-aspirin therapy prior to the event. These patients were identified by medical billing codes. Secondary analyses will be conducted to identify significant risk factors present and the dose and frequency of aspirin used in patients that had a VTE. Data collected included age, sex, weight, comorbidities, type of surgery, location of VTE, time between surgery and VTE, and description of the pharmaceutical regimen used for chemoprophylaxis.

Results: Pending

Conclusions: Pending

PL XII-5

Purpose: To determine which anticoagulant, either Angiomax (bivalirudin) or heparin given to the patient during percutaneous coronary intervention (PCI), resulted in an observed bleed as reported to the National Cardiovascular Data Registry (NCDR).

Methods: A retrospective chart review of a total of 532 patients who underwent percutaneous coronary intervention was conducted during the months of January through June 2017 at BSA hospital. During PCI, patients were either given bivalirudin or heparin for the procedure. Utilizing the NCDR CathPCI Bleeding Risk Score, the patient’s bleeding risk score was calculated based on several patient variables to further assess potential rate of bleeding. Additionally, if any observed bleeding during PCI occurred, this was documented and reported to NCDR by our institution.

Results: Of the 532 patients reviewed, 267 patients received bivalirudin and 265 patients received heparin. Out of the 532 patients, only 33 total patients had an observed bleed as reported to NCDR by our institution. Of the 33 patients, 19 patients (7.12%) who obtained bivalirudin versus 16 patients (6.04%) who obtained heparin had observed bleeding during PCI.

Conclusion: No significant difference was seen in terms of observed bleeding between bivalirudin versus heparin use during PCI.

PL XII-6
ASSESSING THE USE OF ASPIRIN FOR PRIMARY PREVENTION OF SECOND GENERATION ANTIPSYCHOTIC INDUCED CARDIOVASCULAR AND CEREBROVASCULAR RELATED MORTALITY RISKS. Ife-etu Anachebe, John Pinsonnault, Kevin C. Kelly, VA North Texas Health Care System, Dallas, TX.

Purpose: To investigate the efficacy of aspirin in the primary prevention of cardiovascular and cerebrovascular related events in Veteran patients at the VA North Texas Health Care System (VANTHCS) on second-generation antipsychotics (SGAs).

Methods: A retrospective chart review was conducted with patients at VANTHCS who have received at least three months of SGA therapy between January 1, 2007 and December 31, 2016. The incidence of cardiovascular events were then compared for patients that were taking aspirin plus SGA versus patients who were taking an SGA but not taking aspirin prior to the event.

Results: Research in progress

Conclusion: Research in progress

PL XII-7
TRANSITIONS OF CARE: THE IMPACT OF PHARMACISTS ON READMISSION RATES IN PCI PATIENTS. Michael A. Romero, Luke Barnett, Amber Elliott, BSA Hospital, Amarillo, TX.

Purpose: To determine if post percutaneous cardiovascular intervention patients seen by a pharmacist, supplied with a free 30 day supply of a P2Y12 inhibitor (Plavix, Effient, or Brilinta), and counseled over its use and side effects had any effect on their 30 and 90 day readmission rates.

Methods: A list of the patients that received the intervention from January 1, 2016 through September 1, 2017 was compiled to create a baseline population; this list included the patient’s name, age, gender, which P2Y12 inhibitor they received, and which pharmacist provided the intervention. Then retrospectively collected data including the diagnosis-related group (DRG) code associated with their procedure, the cardiologist that performed the procedure, and whether or not they were re-admitted within 30 and 90 days was gathered for the intervention population. Using this data a patient search was performed to compile a list of patients that could have potentially received the intervention, using the DRG code to match similar patients, during the same time period listed above.

Results: After a DRG code guided analysis was performed 1370 patients were isolated. Out of those 1370 patients 147 or 10.7% were readmitted within 30 days, and 234 or 17.1% were readmitted within 90 days. When stratified by only the cardiologist that participated in the intervention during that same time frame, the patient population was reduced to 685 patients. Out of this new population it was found that 62 patients or 9.1% were readmitted within 30 days, and 104 or 15.2% were readmitted within 90 days. Out of the 135 patients that received the intervention 18 or 13.3% were readmitted within 30 days, and 22 or 16.3% were readmitted within 90 days. Irrespective of patient demographics or DRG code, in
the intervention patient population, there was no common trend for why the patients were re-admitted. However, in the patient’s that received the intervention only 3 patients were readmitted for chest pain or further stent placement within 90 days.

**CONCLUSION:** Based on the current data we cannot say that the intervention changed the readmission rate for our post cardiovascular percutaneous intervention patients. There are several factors that could have affected the data including the number of pharmacists that were a part of this intervention, the limitation in the data search due to hospital’s paper chart system, and the patient search was limited to inpatient patient’s only which caused us to exclude 1/6th of the intervention patients.

**XIIB – INTERNAL MEDICINE/PHARMACOTHERAPY**

**PL XII-8**

**EVALUATION OF THE EFFICACY OF DIRECT ORAL ANTICOAGULANTS (DOACS) IN COMPARISON TO WARFARIN IN MORBIDLY OBESE PATIENTS.** Charlene Kalani, Elizabeth Awudi, Thomas Alexander, George Udeani, Salim Surani, Corpus Christi Medical Center, Corpus Christi, Texas.

**PURPOSE:** To examine the efficacy of the direct oral anticoagulants (DOACS) rivaroxaban, dabigatran, and apixaban in comparison to warfarin by the frequency of ischemic stroke and systemic embolic events including pulmonary emboli (PE), deep vein thrombi (DVT), and myocardial infarctions (MI) in patients with either a body mass index (BMI) over 40 kg/m2 or a weight over 120 kg. As well, to examine frequency of major bleeding between the DOAC and warfarin groups.

**METHODS:** Using data retrospectively collected from the institution’s inpatient and outpatient records, we compared the event rates of ischemic stroke, PE, DVT, MI, and major bleeding events in patients on DOAC or warfarin anticoagulation for nonvalvular AF and DVT/PE treatment, and prophylaxis after hip or knee replacement surgery.

**RESULTS:** An interim analysis of 180 patients was performed. There were 90 patients in both arms. Fifty-two percent (n=41) of patients in the DOAC group were on apixaban therapy, 12.2% (n=11) on dabigatran, and 36.7% (n=33) on rivaroxaban. Patients in the DOAC group were followed for an average of 30,151 days and 20% were also on antplatelet therapy. The mean age for patients in the DOAC group was 70 years and 62.5 years in the warfarin group. The average BMI and weight in the DOAC group was 46.7 kg/m2 and 139.3 kg and was 45.8 kg/m2 and 135.9 kg in the warfarin group. There were a total of 11 ischemic stroke and systemic emboli events in the DOAC group and 10 in the warfarin group (OR: 1.11, 95% CI 0.45-2.78; p=0.82). There was a total of 2 major bleeding events in the DOAC group and 3 events in the warfarin group (p=0.65). The events in the DOAC group consisted of 3 patients who developed ischemic stroke, 2 patients who developed DVTs, 1 who developed a PE, and 3 patients who developed a MI. The medication which trended with more events was dabigatran. A major limitation of this study is the small number of patients enrolled and its retrospective design.

**CONCLUSION:** Based on the interim data, rivaroxaban, dabigatran, and apixaban are not associated with increased stroke, systemic emboli, or major bleeding events in comparison to warfarin in morbidly obese patients. However, results are hypothesis generating and future studies are required to fully assess efficacy and safety of the DOACs in morbidly obese patients.

**PL XII-9**

**THE EFFECT OF PHARMACY EDUCATION ON VERIFYING HEPARIN DOSING WEIGHTS IN OBESE PATIENTS POST PHARMACY SKILLS FAIR.** Brent Kitto, Ashley Casey, Britta Staubes, Ochsner Medical Center, New Orleans, Louisiana.

**PURPOSE:** Heparin is an anticoagulant that has been widely used for the past five decades. Despite the long-term use of heparin, clinicians still debate how to appropriately manage it due to an unpredictable pharmacokinetic profile. As such, close monitoring is necessary to assess efficacy and bleeding risk while on heparin. At Ochsner Medical Center, heparin is monitored by anti-Xa levels. Internal Medicine Clinical Pharmacists noted that anti-Xa labs were often supra-therapeutic in obese patients due to using actual body weight doses. In May 2016, the Pharmacy Skills Fair was held at Ochsner Medical Center by the Pharmacy Department. The Clinical Pharmacy Specialists chose to educate all pharmacists on appropriately verifying heparin in obese patients. The education provided focused on the use of adjusted body weight in patients whose actual body weight was greater than 125% of ideal body weight. This study aims to assess whether the education of weight-checking for heparin infusions in obese patients increased the use of adjusted body weight and if this intervention resulted in more therapeutic anti-Xa levels.

**METHODS:** Single-center, retrospective, cohort study comparing outcomes of patients on heparin infusions 6 months prior and 6 months post Pharmacy Skills Fair. The time period of the study is November 2015-November 2016 at Ochsner Medical Center. The primary outcome was to assess whether pharmacy education on using adjusted body weight for dosing heparin in obese patients increased compliance with weight-checking upon verification and subsequent intervention post education. Secondary outcomes included time to therapeutic range (TTR), and percent sub and supra therapeutic. Major and minor bleeding was assessed for safety.

**RESULTS:** A total of 37 patients met inclusion criteria from November 2015 to November 2016. The 2 cohorts were grouped to 6 months pre- Skills Fair (n=21) and 6 months post skills fair (n=16). In the pre- intervention group 1 of 21 (4.8%) patients used the correct dosing weight as compared to 9 of 16 (56.3%) patients in the post intervention group. Seven of the nine correct dosing weight orders were intervened on by a pharmacist. Average TTR in pre- and post-intervention was 12 hours and 10 hours, respectively. The percent supra and sub therapeutic for the pre-intervention group was 33% and 4.8% vs 18.8% and 31.2% in the post-intervention group, respectively. No major or minor bleeding events were reported in either group.

**CONCLUSIONS:** This study suggests that educating pharmacists on using the adjusted body weight dosing in obese patients for heparin infusions increased post-intervention. Additionally, the study found that anti-Xa levels were achieved quicker in the post-intervention group.
The percent supra-therapeutic was higher in the pre-intervention group; however, the percent sub-therapeutic was higher in the post intervention group. There was no difference in bleeding events. The results for this study are ongoing.

PL XII-10
AMANTADINE VERSUS MODAFINIL FOR THE TREATMENT OF TRAUMATIC BRAIN INJURY ASSOCIATED SLEEP-WAKE DISTURBANCES. Rim Mekonnen Hadgu, Amne Borghol, Christopher Gillard, Ifeanyi Onor, Charles Jastram, Candace Wilson Xavier University of Louisiana College of Pharmacy, New Orleans, LA, University Medical Center New Orleans (UMCNO), New Orleans, LA.

PURPOSE: Amantadine and modafinil have been used off-label to improve traumatic brain injury (TBI) related sleep-wake disturbances. The aim of the study is to compare wakefulness and participation in rehabilitation in TBI patients receiving amantadine or modafinil. To our knowledge, there is no head-to-head trial comparing amantadine and modafinil in TBI patients. The primary objective of this study is to determine if there is improved wakefulness with amantadine compared to modafinil at 72 hours post TBI.

METHODS: Data was obtained from the UMCNO medical records database and manual chart review of the electronic medical record. This multi-center, retrospective study includes patients 18 years of age or older admitted for a TBI from August 2012 to August 2017. International Classification Diseases Revision (ICD) 9 codes (850-859.9 and 907), ICD 10 codes (S06.0-S06.9) for TBI, modafinil and amantadine were utilized to identify patients. TBI includes motor vehicle accidents, concussions, and stroke. The primary outcome for the study is the change in Glasgow Coma Scale (GCS) score from amantadine initiation to 72 hours post TBI.

RESULTS: An interim analysis of 20 patients receiving amantadine was performed. The mean age was 38.6 years old and 70% were male. The average duration of amantadine treatment was 10.8 days and the time from TBI to amantadine initiation was 383.9 hours. The average dose weight of amantadine at 72 hours was 540 mg and the total dose weight at discharge was 1865 mg. The change in GCS score from amantadine initiation to 72 hours was 0.75; 95% CI (-0.82-2.32), p=0.33), which was not statistically significant. However, there was a statistically significant increase in the change in GCS score from amantadine initiation to discharge (1.75; 95% CI (0.48-3.0), p=0.009). At 72 hours after amantadine initiation, patients participated in 1.75 physical therapy and/or occupational therapy sessions compared to 5.35 sessions by discharge.

CONCLUSION: In progress.

PL XII-11
ENOXAPARIN VERSUS CONTINUOUS HEPARIN FOR PERIPROCEDURAL BRIDGING IN ATRIAL FIBRILLATION PATIENTS WITH ADVANCED CHRONIC KIDNEY DISEASE. Chandler D. Schexnayder, Christine Aguilar, Kathleen Morneau, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

PURPOSE: Utilization of parenteral anticoagulation for periprocudural bridging in patients with atrial fibrillation (AF) is controversial. Patients with AF and advanced chronic kidney disease (ACKD) have an increased risk of stroke and thromboembolism. Although, unfractionated heparin (UFH) is the preferred agent in ACKD, enoxaparin 1 mg/kg/day is an alternate option. The hypothesis of this study is that enoxaparin versus heparin in periprocudural management would result in decreased length of hospitalization, less economic burden, and lower incidence of nosocomial infections with no significant differences in major and minor bleeding and thromboembolic complications.

METHODS: The primary objective of this study is to evaluate the length of hospitalization in ACKD patients with AF treated with periprocudural anticoagulation with subcutaneous enoxaparin versus intravenous unfractionated heparin. Secondary objectives include occurrence of major and minor bleeding, nosocomial infections, thromboembolic complications (stroke, myocardial infarction, and venous thromboembolism) within 30 days post-procedure, and an economic analysis of the two therapies. This study will be a retrospective chart review from January 2008 to September 2017. Patients included are those 18 years of age or older with AF on warfarin therapy, KDOQI CKD stage 4 and 5, and have undergone parenteral anticoagulation for an elective procedure requiring temporary interruption of warfarin. Exclusion criteria consists of major bleeding 6 weeks prior to procedure, baseline thrombocytopenia, history of heparin-induced thrombocytopenia (HIT), and hypersensitivities to heparin or enoxaparin. Patients will be identified through cardiology clinic visits and medication dispensing records at Michael E. DeBakey Veteran Affairs Medical Center (MEDVAMC). Statistical analysis will include descriptive statistics and univariate and multivariate logistic regressions. All data will be collected without patient identifiers and maintained confidentially. This study has been approved Baylor College of Medicine Institutional Review Board and MEDVAMC Research and Development Committee.

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

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

PL XII-12
EVALUATION OF AN INPATIENT CLINICAL DECISION-MAKING TOOL FOR DIRECT ORAL ANTICOAGULANTS. Caroline Root, Oluwatoyin Kuloyo, Shaile Sheth, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

PURPOSE: The use of direct oral anticoagulants (DOACs) for initial treatment of venous thromboembolism (VTE) and stroke prevention in nonvalvular atrial fibrillation (NVAF)
has increased following the publication of numerous trials demonstrating their efficacy and safety compared to warfarin. Furthermore, DOACs require less frequent laboratory monitoring than warfarin and do not necessitate dietary restrictions. However, they have only been evaluated in limited patient populations, require renal dose adjustment, and have several significant drug-drug interactions. The Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC) has developed and implemented a clinical decision-making order set to guide prescribers toward appropriate ordering of DOAC therapy.

**METHODS:** A retrospective chart review was conducted on hospitalized medicine patients with VTE or NVAF initiated on DOAC therapy from February to September 2017. The primary objective of this study was to assess appropriateness of DOAC usage after implementation of a decision-making tool. Secondary objectives included duration of VTE treatment, evaluation of renal dose adjustment, pharmacy consult utilization, and evaluation of drug-drug interaction (DDI) management.

**RESULTS:** The majority of the 75 patients prescribed DOAC therapy were initiated on rivaroxaban (65%) with the most common indication being NVAF (67%). The median age of patients started on rivaroxaban was 68 years and apixaban was 75 years. A select number of patients, 6 (12.2%) on rivaroxaban and 3 (12%) on apixaban, were >120 kg. In terms of renal adjustment, there was one patient, on apixaban for NVAF, whose dose was appropriately adjusted per order set recommendations. Doses were also reduced for one patient on rivaroxaban and five patients on apixaban with borderline renal function. Pharmacy was consulted for eight patients; however, most consultations did not meet criteria for pharmacy intervention. A moderate or major DDI was present in 28 (57.1%) and 2 (4.1%) of patients started on rivaroxaban and 17 (68%) and 0 patients started on apixaban, respectively. Common DDIs included concomitant antiplatelet therapy, as well as NSAID use. The two major DDIs seen with rivaroxaban were primidone and phenytoin, with the patients being switched to edoxaban and warfarin, respectively.

**CONCLUSION:** Overall, the inpatient clinical decision-making order set was utilized appropriately in respect to renal function, and DDI management. However, pharmacy was not formally consulted for patients with borderline renal function and DOAC therapy was inappropriately initiated on several patients > 120kg, despite order set recommendations.

**XIIC – INTERNAL MEDICINE/PHARMACOTHERAPY**

**PL XII-14 APPROPRIATENESS OF DIRECT ORAL ANTICOAGULANT PRESCRIBING AT A TERTIARY ACADEMIC MEDICAL CENTER. Megan Shipsky, Ngoc Vu, Ekaterina Stani1ova, Yana Bukovskaya. Ochsner Medical Center, New Orleans, LA.**

**PURPOSE:** Direct oral anticoagulants (DOACs) offer several advantages over Vitamin K antagonists (VKAs), such as fewer drug and food interactions, no additional therapeutic monitoring, and lower incidences of bleeding. Previous studies report that up to 60% of patients receive incorrect prescribing of DOAC therapy. The purpose of this study is to examine the incidence of inappropriate prescribing of direct oral anticoagulants (DOACs) and resultant hemorrhagic and thrombotic adverse events at Ochsner Medical Center.

**METHODS:** This was a retrospective electronic medical record review of adult patients diagnosed with deep vein thrombosis, pulmonary embolism, and/or stroke who received a DOAC conducted between July 1, 2015 to June 30, 2017. Data points collected include medication, dosing, comorbidities, and 30- and 90-day readmissions related to thrombotic or hemorrhagic events. Data will be analyzed using descriptive statistics.

**RESULTS:** Results in progress at the time of abstract submission.

**CONCLUSION:** At our institution we expect a number of inappropriately prescribed DOACs. We hope this study will show a need for further physician education and
implementation of an indication-based dosing algorithm embedded into the computerized physician order entry (CPOE) system.

**PL XII-15**

**EVALUATION OF A TOOL TO PREDICT 90-DAY READMISSION OR DEATH FOLLOWING HOSPITALIZATION FOR COPD.** Alexander S. Patlovany, Annabel L. Schumaker, San Antonio Military Medical Center, San Antonio, TX

**BACKGROUND:** COPD exacerbation admissions are associated with a high degree of morbidity and mortality. Additionally, clinicians do not accurately identify those patients who are at greatest risk for readmission or death. The PEARL (Previous admissions, Extended Medical Research Council Dyspnoea Scale (eMRCD), Age, Right-sided heart failure, Left sided heart failure) tool has previously been validated to predict 90-day readmission or death after admission for a COPD exacerbation. The modified Medical Research Council (mMRC) is a validated dyspnoea scale.

**PURPOSE:** The purpose of this study is to evaluate PEARL using the mMRC score in place of eMRCD.

**METHODS:** The study has been submitted to the Institutional Review Board and approved. A report from the electronic medical record has identified patients admitted to San Antonio Military Medical Center (SAMMC) with a primary diagnosis of acute exacerbation of COPD in the past year. The following data will be collected: number of admissions in the last year, mMRC score from last outpatient visit, age, cor pulmonale diagnosis, left ventricular failure diagnosis, readmission within 30 days and 90 days, death within 30 days and 90 days, sex, beneficiary status, long-term institutional care status, diagnoses for diabetes, chronic kidney disease, atrial fibrillation, asthma, and cognitive impairment, length of stay, arterial blood gas pH <7.35, long-term oxygen, long-term oral steroids, and cigarette pack-years. A modified PEARL score will be calculated using mMRC scores of 0, 1, 2, and 3 as equivalent to eMRCD scores of 1, 2, 3, and 4 respectively. mMRC scores of 4 will be assessed as eMRCD 5a in one calculation and as 5b in a second calculation. Chi-square will be used to compare PEARL risk assignment (low, intermediate, or high) with the combined endpoint of readmission or death without readmission at both 90 days and at 30 days.

**RESULTS:** N/A

**CONCLUSION:** pending

**REFERENCES:**

**PL XII-16**

**RETROSPECTIVE STUDY ON THE EFFECT OF VITAMIN K IN BLEED PREVENTION IN NON-BLEEDING CIRRHOSIS PATIENTS.** Pinhui Chen, Nathalie Quach, Y-Nha Nguyen, Garrett Wolfe, Valley Baptist Medical Center – Brownsville, Brownsville, TX.

**PURPOSE:** Historically, cirrhosis was considered as a purely hemorrhagic coagulopathy. In patients with cirrhosis, bleeds are often accompanied by prolonged PT/INR with the general belief that elevated INR must be corrected by Vitamin K. However, several recent studies have shown that INR is an inadequate marker for bleeding risk in cirrhotic patients and the use of Vitamin K is not associated with a decrease in bleeding events. The purpose of this study is to assess the efficacy of Vitamin K in preventing bleeding events in non-bleeding cirrhotic patients.

**METHODS:** This is a retrospective study of patients who were diagnosed with cirrhosis and had an elevated INR of at least 1.5 during admission. Data were collected from the hospital’s electronic records from September 2015 through October 2017. Patients were included if they were at least 18 years old, admitted to the hospital for at least 24 hours, and had no active bleeding prior to admission. Patients were excluded if they were on treatment dose anticoagulation, had active bleeding prior to receiving Vitamin K, or had other appropriate indication for Vitamin K use. The primary outcome is the bleeding rate between patients who received Vitamin K and those who did not receive Vitamin K. Bleeding events were defined as transfusion of 2 or more units of packed red blood cells in a 24 hour period, undergoing surgical correction for bleeds, or a hemoglobin decrease by at least 2 g/L. Secondary outcome is the change in INR in patients who received Vitamin K.

**RESULTS:** pending

**CONCLUSION:** pending

**PL XII-17**

**EFFECTS OF AS-NEEDED INTRAVENOUS ANTIHYPERTENSIVE ON THE LENGTH OF HOSPITAL STAY.** Kayla R. Phillips, Jose J. Hernandez, Daniela Z. Bazan, Rene A. Verdusco Jr., Timothy R. Heath, Doctors Hospital at Renaissance, Edinburg, TX.

**PURPOSE:** To examine the effects of the administration of as-needed intravenous antihypertensives agents on the hospital length of stay at Doctors Hospital at Renaissance (DHR). A noticeable increase in the use of intravenous antihypertensives prompted a further look into the utilization and possible consequences of administration at DHR.

**METHODS:** Using data retrospectively collected from the institution’s electronic medical records from August 1, 2016 through July 31, 2017, hospital length of stay was compared for those that received versus those who had an order but did not receive any doses of as-needed intravenous hydralazine and/or labetolol.

**RESULTS:** (in process)

**CONCLUSION:** (in process)
IMPACT OF A PHARMACIST MANAGED PROTOCOL LIMITING CONTINUOUS INFUSION PROTON PUMP INHIBITOR USE IN PATIENTS WITH AN UPPER GASTROINTESTINAL BLEED.
Lauren Schwaner, Andrew Faust, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

PURPOSE: To evaluate the impact of a pharmacist managed protocol aimed at reducing continuous infusion proton pump inhibitor use in upper gastrointestinal bleeds.

METHODS: This is a retrospective analysis of patients receiving intravenous pantoprazole for suspected upper gastrointestinal bleed before and after the implementation of a pharmacist managed protocol. Prior to implementation, patients were continued on pantoprazole continuous infusions at the physician’s discretion. After implementation, all hemodynamically stable patients were allowed one dose of pantoprazole as a continuous infusion and then were transitioned by the pharmacist to intermittent IV injections twice daily. The patients in the pre-protocol group were treated between January 1 and May 31, 2017 while those in the post-protocol group were treated between July 1 and November 30, 2017. Patients were included if they were 18 years of age or older and initiated on pantoprazole for a presumed upper gastrointestinal bleed. They were excluded if they were not being treated for an upper gastrointestinal bleed, or if they had transferred from an outside hospital where they had been admitted for longer than 24 hours. 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 mortality.

RESULTS: After screening 702 patients, 222 patients met inclusion criteria (115 in the pre-protocol group and 107 in the post-protocol group). Baseline characteristics were similar between the two groups. The re-bleeding rate at day 7 was 7% in the pre-protocol group, compared to 4% in the post-protocol group (p=0.17). Use of the protocol reduced the median number of continuous infusions per patient [4 (IQR 2-4) vs 2 (IQR 1-3); p<0.001], but increased the median number of IV push injections [2 (IQR 2-4) vs 4 (IQR 2-7); p<0.001] in the pre- and post-protocol groups, respectively. There were no significant differences between the pre- and post-intervention groups regarding blood transfusions (65% vs. 63%; p=0.78), endoscopic interventions (79% vs. 79%; p=1.0), hospital length of stay [4 days (IQR 3-8) vs. 4 days (IQR 2-8); p=0.521], or hospital mortality (5% vs. 2%; p=0.28).

CONCLUSIONS: Implementation of this pharmacy managed protocol, allowing automatic transition from pantoprazole continuous infusions to intermittent injections in hemodynamically stable patients with an upper gastrointestinal bleed, had no detrimental effect on the incidence of re-bleeding within 7 days.

ASSESSING THE ACCURACY OF SEPSIS ALERTS: ST. JOHN SEPSIS AGENT ALGORITHM.
Elizabeth Stephenson, Jennifer Cortes, Memorial Hermann – Texas Medical Center, Houston, TX.

PURPOSE: To evaluate the accuracy of the St. John Sepsis Agent Algorithm compared to a potential quick Sequential Organ Failure Assessment (qSOFA) alert mechanism.

METHODS: Using data collected retrospectively from our institution’s electronic medical records and from monthly sepsis reports, we assessed what criteria activated the St. John Sepsis Agent Algorithm, if a potential qSOFA mechanism would have activated an alert, and if the patient was diagnosed with sepsis during the same hospitalization. Patients’ who activated a St. John Sepsis Agent Algorithm alert were assessed using qSOFA criteria (respiratory rate, systolic blood pressure, mental status). If two of the three criteria were met within a six hour timeframe, the potential qSOFA mechanism was considered activated.

RESULTS: Baseline characteristics were assessed for baseline data (n=120) and post-implementation data (n=448) and were similar between the two groups. Baseline data depicted the most common criteria for a St. John Sepsis Agent Algorithm to be activated were elevated white blood cell count (70.0%), elevated heart rate (62.5%), and elevated respiratory rate (50.0%). Baseline data showed of the patients diagnosed with sepsis, 13.7% (22/161) activated a St. John Sepsis Agent Algorithm alert; and of the total patients who activated a St. John Sepsis Agent Algorithm alert, 18.3% (22/120) were diagnosed with sepsis. Post-implementation data showed of the patients diagnosed with sepsis, 20.2% (98/485) activated a St. John Sepsis Agent Algorithm alert; and of the total patients who activated a St. John Sepsis Agent Algorithm alert, 21.9% (98/448) were diagnosed with sepsis. Post-implementation data also showed of the patients diagnosed with sepsis, 18.3% (22/120) were diagnosed with sepsis. Post-implementation data also showed of the patients diagnosed with sepsis, 20.2% (98/485) activated a St. John Sepsis Agent Algorithm alert; and of the total patients who activated a St. John Sepsis Agent Algorithm alert, 21.9% (98/448) were diagnosed with sepsis. Post-implementation data also showed of the patients diagnosed with sepsis, 9.7% (47/485) activated the potential qSOFA mechanism; and of the total patients who activated the qSOFA mechanism, 29.6% (47/159) were diagnosed with sepsis. Comparing St. John Sepsis Agent Algorithm to a potential qSOFA alert mechanism, 238 false positive alerts were eliminated with the qSOFA mechanism; however, 51 true positive alerts were lost.

CONCLUSION: Based on interim data, qSOFA may decrease the number of false positive alerts; however, the potential mechanism may also decrease the number of true positive alerts. A major limitation hindering the assessment of true positive alerts with a qSOFA mechanism is the population pool assessed was established from patients who activated a St. John Sepsis Agent Algorithm alert. Thus, the number of true positive alerts for the qSOFA mechanism could not exceed the number the St. John Sepsis Agent Algorithm detected, and it is uncertain if the qSOFA mechanism would detect septic patients who did not activate the St. John Sepsis Agent Algorithm.
XIIIA – MEDICATION-USE SAFETY, PHARMACY SYSTEMS & OPERATIONS

PL XIII-1
IMPACT OF A PHARMACY EDUCATIONAL INTERVENTION FOR PAIN MANAGEMENT IN A UROLOGIC SURGERY POPULATION. Jonathan Hartmann, Catherine Oliver, Daniel Canter, Steven Lee, Jessica Stover, Ochsner Medical Center, New Orleans, Louisiana.

PURPOSE: Opioids are a common and sometimes necessary option for pain management in the post-operative setting. The rising epidemic of opioid abuse has prompted healthcare providers to seek ways of mitigating any potential overuse of opioids despite the lack of accepted guidance and standardized practice recommendations. There is a paucity of literature providing any consensus on ideal opioid prescribing amounts amongst surgeons in general surgery patients. New studies aiming to validate the use of provider education and peer reviewed, data driven prescribing practice tools are needed as opioid stewardship initiatives continue to grow. The purpose of this study is to assess the impact of a pharmacist driven educational intervention provided to physicians on opioid prescribing practice in a urologic surgery population at Ochsner Medical Center.

METHODS: Single-center, retrospective, pre-post intervention study comparing physician opioid prescribing practices for specific urologic procedures before and after a pharmacist driven educational intervention in December 2017 at Ochsner Medical Center. Opioid prescribing practice data were collected from January 2016 to February 2018 for patients who underwent specific procedures of interest. Mean pills prescribed represented by morphine equivalents was used as the outcome measure.

RESULTS: Results are currently in progress.

CONCLUSIONS: Conclusions are currently in progress.

PL XIII-2
OUTCOMES AFTER BENZODIAZEPINE DISCONTINUATION IN OPIOID-DEPENDENT VETERANS. Leslie M. Coons, Rick A. Weideman, Kevin C. Kelly, VA North Texas Health Care System, Dallas, TX.

PURPOSE: The purpose of this study is to evaluate the methods and outcomes of benzodiazepine (BZD) discontinuation (D/C) in the Veteran population also using opioid analgesics. On August 31, 2016, the Food and Drug Administration announced that it was requiring a boxed warning on opioids regarding the serious risks associated with their concomitant use. This warning forced prescribers to critically evaluate the prescribing of these medications. However, the Veterans Health Administration (VHA) put the responsibility on their prescribers approximately 10 months prior to this warning by implementing an order check in the VHA’s software system, Computerized Patient Record System (CPRS). The goal of this study is to provide guidance to healthcare providers on how to approach this boxed warning, discover methods for safe and effective BZD D/C, and provide information on clinically significant outcomes for the Veterans who discontinued their chronic BZD.

METHODS: Retrospective chart review in CPRS was utilized to collect data on Veterans who had successfully discontinued a chronic BZD while remaining on the opioid. Outcomes were collected within a time frame of one year prior to and one year after the BZD D/C. The primary outcome was emergency department (ED) visits, hospitalizations, and reports made to the crisis line due to anxiety, post-traumatic stress disorder (PTSD), hallucinations, suicidal ideations, and panic attacks. The secondary outcomes include addition of a new class of a psychiatric medication prescribed shortly before or after BZD D/C and a positive UDS for medications other than the opioid.

RESULTS: Fifty-eight Veterans met inclusion criteria for this study. The McNemar test was utilized to analyze the number of people with a change in occurrences of the primary outcome. Three Veterans had an event after BZD D/C without having the primary event occur in the year of chronic BZD and opioid use. Five Veterans had events occur during the year of chronic BZD use and no events after BZD D/C. The McNemar test resulted in a p value of 0.7237, indicating there’s no difference in event occurrence after BZD D/C. Nearly 40% of Veterans (n=23) started using a new psychiatric medication around the time of BZD D/C, with the most common agents being zolpidem, trazodone, and/or selective serotonin reuptake inhibitors. Additionally, about 26% of Veterans (n=15) had positive UDS for illicit or non-prescribed drugs. Of those 15 people, two had occurrences of the primary outcome after BZD D/C, one of which had not had an event during the period of prescribed BZD and opioid use. Lastly, five of the 58 veterans had physicians who documented utilizing a tapering strategy to successfully discontinue the BZD.

CONCLUSION: BZD D/C in opioid-dependent Veterans did not result in a significant increase in acute mental health crises. Addition of other psychiatric medications and tapering may aid practitioners in the safe and successful D/C of BZDs. Unfortunately, some of the agents that are used after BZD D/C (e.g., prescribed zolpidem or illicit substances) may still put the person at risk for respiratory depression and other negative outcomes. The D/C of a BZD in an opioid-dependent person can be safely achieved, but it requires thoughtful, patient-specific strategies by the practitioner.

PL XIII-3
IDENTIFYING AT RISK PATIENTS FOR OPIOID MISUSE IN NON-CANCER CHRONIC PAIN MANAGEMENT USING EPIC®-EHR IN OUTPATIENT CLINICS OF A HEALTHCARE SYSTEM. Abdul M. Gabisi Jr, Erika J. Bergeron, Jacqueline Y. Milton-Brown, Andrea Henry, Clortis Pradia-Williams, Harris Health System, Houston, TX.

PURPOSE: In the March 2016 CDC Guideline for Prescribing Opioids for Chronic Pain, the use of urine drug testing (UDT) is recommended in assessing risk of harm or misuse in patients with active opioid prescription for greater than ninety consecutive days. Currently, data quantifying the percentage of UDT requests from primary care clinicians in the outpatient setting are limited. The purpose of this study is to assess whether there is an underutilization of urine drug testing in evaluating risk of harm or misuse in prescribing opioids for chronic pain.
METHODS: The monthly electronic medical record reports from EPIC®-EHR for outpatient opioid prescriptions will be reviewed from March 2017 to August 2017. Patients receiving chronic opioid therapy in the outpatient setting will be included. Patients will be excluded if they received their chronic opioid therapy at Ben Taub or Lyndon B. Johnson emergency centers. The following data will be collected and included in the analysis: patient age, gender, ethnicity, the prescribed opioid, concurrent respiratory diagnosis (COPD, Obstructive Sleep Apnea), concurrent benzodiazepines, primary care physician, documentation of an opioid contract between patient and provider, documentation of UDT on file, and active opioid prescription for greater than ninety consecutive days. All data will be used to assess the utilization of UDT in prescribing opioids for chronic pain management and development of potential cost-savings patient education initiative for opioid naive patients.

RESULTS: An interim analysis of 600 non-cancer patients was randomly selected from 4246 patients who filled prescriptions for opioids at Harris Health System from March 2017 to August 2017. One hundred and seventy-one (171 patients) was identified as chronic pain patients and four hundred and twenty-nine (429 patients) as acute pain patients per CDC guidelines for prescribing opioids for chronic pain. Out of the 171 chronic pain patients, 66% of patients have baseline history of urine drug screening (UDS). The remaining 34% of chronic pain patients have no history of UDS. The UDS panel of illicit drugs consisted of amphetamine, barbiturate, benzodiazepine, cannabinoid, cocaine, opiate, and PCP. Out of the 66 patients with UDS in 2017, 71% tested positive for at least one of the drugs in the panel. The most frequently observed drugs in panel other than opiates are cannabinoid (21%) and benzodiazepines (17%). Nine percent (9%) of the chronic pain patients were noted for concurrent use of benzodiazepines.

CONCLUSION: Based on this data, the clinicians noted documentation of utilization of UDS serves to promote good practices in chronic pain management. However due to the national opioid crisis, a concerted effort must be made to continue to monitor opioid prescribing patterns.

PL XIII-4
IMPACT OF HURRICANE HARVEY AT A CHARITY CLINIC PHARMACY, AND THE RESPONSE OF THE PHARMACY STAFF FOLLOWING THE HURRICANE. Blanca Y. Guerra, Texas Southern University College of Health Pharmacy and Health Sciences, Houston, TX.

PURPOSE: Pharmacists remain the most accessible healthcare provider in the community’s health care system and play a vital role during disasters. With advances in technology, many natural disasters can now be predicted, however we cannot predict how the damage and aftermath of such events will impact our community. Various protocols are currently in place at community pharmacies, ambulatory care clinics, and hospital pharmacies to aid patients before, during, and after catastrophic disasters. This project was design to evaluate the aftermath of Hurricane Harvey at a charity clinic pharmacy.

METHOD: A retrospective approach was used to examine operational efforts from September 1, 2017 to September 30, 2017; data collected from that month was also used to compare to previous 6 months (March 1, 2017 to August 31, 2017). The number of hours and value of contribution from volunteer pharmacist were obtained from a report server excel spreadsheet. A daily report obtained from the PharmaServ dispensing software was used to quantify the number of prescriptions; the number of visits, and number of patients were exported from Healthport scheduling database. Inventory invoices were used to calculate the total dollar amount of medications donated.

RESULTS: During storm recovery efforts, the standard patient fees and eligibility requirements were temporarily waived to aid patients in the community and remove barriers to care. Pharmacists from southeast Texas and across the country volunteered at the pharmacy, giving more than 560 hours of service at a value of $39,849.60 compared to a monthly average of 155 hours at a value of $10,831.80 over the previous 6 months. The pharmacy had 916 visits from 719 patients and dispensed more than 2,800 prescriptions in the month of September compared to an average of 1,800 prescriptions, 700 visits and 564 patients in the previous 6 months. In the pharmacy department, the clinic pharmacy received donated medications from the disaster relief organizations including Americares, Dispensary of Hope, and Direct Relief, immediately following the storm. In September alone over $1.14 million in donated medication inventory was received for relief efforts at the pharmacy compared to an average of $350,000 in the previous 6 months. This outpouring of support and service allowed the clinic to improve the health of their community for short-term issues during the hurricane recovery period, as well as for long-term chronic and managed conditions.

CONCLUSION: By building partnerships with local and national groups, the clinic was able to react to Hurricane Harvey quickly and effectively. A crucial component of this success was having a disaster response protocol in place, as well as being flexible and community-minded. Through the acquisition of donated supplies and use of volunteer pharmacists, the clinic made an enormous impact throughout southeast Texas by filling vital prescriptions for low-income and Harvey-impacted patients. By deploying each available resource strategically, such as the satellite locations in hard-hit rural areas, the clinic reached thousands of medication-dependent patients in a time of need.

PL XIII-5
INTERMITTENT IV INFUSION VERSUS SLOW IV PUSH BETA-LACTAM ADMINISTRATION: EFFECT ON CLINICAL OUTCOMES. Paige Baize, Terri Smith, Andrew Faust, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

PURPOSE: To evaluate the safety and efficacy of IV push versus intermittent IV infusion of cefepime, ceftriaxone, and meropenem.

METHODS: This is a retrospective analysis comparing administration methods of cefepime, ceftriaxone, and meropenem before and after a national IV fluid shortage. Prior to October 2017, cefepime, ceftriaxone, and meropenem were given via intermittent IV infusion over 30-60 minutes. After October 2017, cefepime, ceftriaxone, and meropenem were given via slow IV push over 2-5 minutes. Infusion patients received a study antibiotic between October 19 and December 31, 2016, and IV push patients received a study antibiotic between October 19 and December 31, 2017. Patients were included if they were at least 18 years of age. Exclusion criteria included antibiotic duration < 72 hours, drug-drug mismatch, absolute neutrophil
count < 1,500 cells/mm³, missing clinical data, or transfer from an outside hospital. No exclusion criteria were applied in the analysis of phlebitis. The primary endpoints assessed were clinical improvement 48 hours after initiation of the antibiotic, and incidence of phlebitis. Secondary endpoints assessed were antibiotic duration, PICC or midline placement, and mortality.

RESULTS: One hundred and eight patients were considered in the analysis of clinical improvement (57 in the infusion group and 51 in the IV push group). One hundred and eighteen patients were evaluated for incidence of phlebitis (60 in the infusion group and 58 in the IV push group). Baseline characteristics were similar between the two groups. There were no statistically significant differences between the infusion and IV push groups regarding clinical improvement 48 hours after antibiotic initiation (43.3% vs. 47.8%; p=0.79), incidence of phlebitis (25% vs. 24.1%; p=1.00), antibiotic duration (6.07 ± 2.90 days vs. 5.57 ± 2.52 days; p=0.34), PICC or midline placement (59.6% vs. 47.1%; p=0.25), or death (1.8% vs. 3.9%; p=0.60).

CONCLUSIONS: Based on this retrospective analysis, transitioning from administration of cefepime, ceftriaxone, and meropenem by intermittent IV infusion to slow IV push had no deleterious effects on clinical outcomes or incidence of phlebitis.

PL XIII-6
DECREASE IN STANDARDIZED VANCOMYCIN INFUSION RATES FROM 1000 MG PER HOUR TO 750 MG PER HOUR: EFFECT ON INFUSION-RELATED REACTIONS. Sydney N. Kutter, Sarah S. Cho, Nathan P. Fewel, Amanda B. Trimm, Central Texas Veterans Health Care System, Temple, Texas.

PURPOSE: To compare the proportion of patients in our facility who develop vancomycin infusion-related reactions between those receiving a rate of 1000 mg/hour versus those receiving 750 mg/hour. This project was a continuation of a pilot project which compared the incidence of infusion reactions with unstandardized rates to standardized rates of 1000 mg/hour.

METHODS: A single-site, retrospective, observational, quality improvement project evaluated hospitalized patients who received at least one dose of IV vancomycin. Patients were reviewed for inclusion from a six month period when rates were 1000 mg per hour (January 2016 to June 2016) and compared to a six month period after rates were changed to 750 mg per hour (February 2017 to July 2017). Patients were excluded if they received concurrent administration of systemic steroids or antihistamines during vancomycin therapy, or if they received vancomycin peri-operatively.

RESULTS: 878 patients were reviewed. 545 patients were included, with 185 in the 750 mg/hour group and 360 in the 1000 mg/hour group. The project was terminated early as descriptive statistics demonstrated no significant difference in the primary outcome of infusion-related reactions between the groups (7 events (3.8%) and 10 events (2.8%)) in the 750 mg/hour group and 1000 mg/hour group, respectively.

CONCLUSION: While this study was unable to find a difference in infusion-related reactions between a slower rate of 750 mg/hour versus 1000 mg/hour, it is well-known that vancomycin infusion-related reactions are more common with faster infusion rates.

PL XIII-7
IMPROVEMENT OF PATIENT’S PAIN ASSESSMENT AND AS NEEDED PAIN MEDICATION ADMINISTRATION. Wei Lai, Teri Ogg, Memorial Hermann – Texas Medical Center, Houston, TX.

PURPOSE: To evaluate the existing process of pain assessment score documentation and the timing of the administration of as needed (PRN) pain medications in response to a documented pain assessment score at Memorial Hermann – Texas Medical Center, in order to identify potential problems in the existing process and implement strategies to increase safety and quality of pain management for patients.

METHODS: Retrospectively collected data from the institution’s electronic medical records including all pain assessment scores, PRN pain medications administered, and the date and time of administration. One hundred patients were randomly selected from those admitted to the surgical trauma floor of Memorial Hermann – Texas Medical Center both before and after a 2-week pilot intervention period to compare the percentage of patients receiving PRN pain mediation within 30 minutes after a pain assessment score documentation and the percentage of PRN pain mediation administered due to a pain assessment score documentation. Implemented strategies include nurse education, monthly audits, as well as translation of Wong-Baker facial pain rating and numeric pain rating question for non-English speaking patients.

RESULTS: Prior to any intervention, data of 100 patients was analyzed. A total of 893 PRN pain medication doses were administered. Of those pain medication doses, 32.4% were administered without a pain assessment score documented beforehand. Only 59.7% of PRN pain medication doses were administered within 30 minutes of a pain assessment score documentation. 4.5% were administered within 60 minutes, and 3.5% were administered more than 1 hour after a pain assessment score was documented.

CONCLUSION: Post-intervention data collection and analysis of another 100 patients is currently in progress, and data will be compared with pre-intervention data to determine the effectiveness of the implemented strategies and the steps for future actions.
XIIIIB – PEDIATRICS / NEONATOLOGY

PL XIII-8
SHORT-TERM EFFECTS OF PROPHYLACTIC CORTICOSTEROID THERAPY IN VENTILATOR-DEPENDENT, PRETERM INFANTS: HYDROCORTISONE VERSUS DEXAMETHASONE.
An Nguyen, Jamie Maze, Lea Mallett, Char Peery, Niraj Vora, Chanin Wright, Baylor Scott and White McLane Children’s Medical Center, Temple, TX.

PURPOSE: While dexamethasone has been used to shorten intubation time and reduce rates of bronchopulmonary dysplasia development in preterm infants who were placed on ventilator secondary to respiratory distress, its short-term and long-term adverse effects have deterred its use, especially at high doses. In recent years, hydrocortisone has emerged as an alternative therapy. The purpose of this study is to compare the efficacy and short-term effects of low-dose dexamethasone and hydrocortisone as prophylactic therapy for bronchopulmonary dysplasia in preterm, ventilator-dependent infants.

METHODS: This study was submitted and approved by the Institutional Review Board. Retrospective chart review via an electronic medical record system is utilized to evaluate infants who received hydrocortisone or dexamethasone in the Neonatal Intensive Care Unit for respiratory distress. Infants with a gestational age of 25 to 32 weeks, birth weight less than 1500 grams, and who required mechanical ventilation secondary to respiratory distress syndrome between 2015 and 2017 are included in the study. Those with severe congenital neurologic or cardiovascular defects are excluded. Infants who received low-dose dexamethasone or hydrocortisone will be compared to each other as well as a control group. Primary outcomes are set to measure time to extubation, development of bronchopulmonary dysplasia at 36 weeks corrected gestational age, the number of patients discharged home on oxygen, and death in each group. Short-term adverse effects, as well as complications during hospitalization, will be measured as secondary outcomes.

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

PL XIII-9
ROLE OF EARLY-ONSET SEPSIS RISK CALCULATOR TO GUIDE MANAGEMENT OF NEONATAL SEPSIS RELATED TO CHORIOAMNIONITIS.
Payal Kapadia, Brian Meadows, Amanda Stoneman, Baylor Scott and White Health All Saints Medical Center, Fort Worth, TX.

PURPOSE: Neonatal early-onset sepsis (EOS), an invasive bacterial infection, can result in severe systemic illness and even death of infected infants. Current guidelines recommend that all newborns of mothers with chorioamnionitis, a major risk factor for EOS, be treated with empiric antibiotics and a limited evaluation. This practice has led to unnecessary antibiotic therapy for many infants. The purpose of this study is to examine the effect of the neonatal EOS risk calculator and assess its efficacy at reducing the number of newborns exposed to laboratory testing and antibiotics at Baylor Scott and White All Saints Medical Center- Fort Worth.

METHODS: Using data collected retrospectively from the electronic health records; we compared antibiotic exposure and extent of laboratory testing in newborns affected by chorioamnionitis 12 months before implementation of the EOS risk calculator versus 12 months after the change. P values were obtained from Fisher exact tests for categorical variables and T-tests or Wilcoxon rank-sum tests for continuous variables.

RESULTS: An analysis of 167 patients was performed. Before the implementation of the calculator, 97 of 98 patients received antibiotics versus 27 of 69 patients after (99% vs. 40%, p<0.001). Of the 98 patients before utilization of the calculator, 91 received between 2 to 4 CBCs (complete blood count), 5 patients received over 5 CBCs with only 2 patients getting one or less. Of the 69 patients reviewed after the utilization of the calculator 47 patients received between 2 to 4 CBCs, 21 patients received less than one and zero patients received 5 or more CBCs. The data showed a statistically significant decrease in the amount of laboratory testing after implementation of the risk calculator (p<0.001). Baseline characteristics were similar between both groups. Mean length of stay was similar between both groups however; this study was not large enough to detect statistical difference for this outcome.

CONCLUSIONS: Based on the data, utilization of the EOS risk calculator showed a statistically significant decrease in antibiotic exposure and amount of laboratory testing in newborns affected by chorioamnionitis.

PL XIII-10
ASSESSMENT OF VANCOMYCIN DOSING AND PHARMACOKINETICS IN POSTOPERATIVE PEDIATRIC PATIENTS IN THE CARDIOVASCULAR INTENSIVE CARE UNIT.
Caitlin Le, Amanda Hayse, Kelly Peschke, Susan Hupp, Children’s Health Children’s Medical Center Dallas, Dallas, TX.

PURPOSE: To evaluate empiric vancomycin dosing in pediatric postoperative cardiothoracic surgery patients in the cardiovascular intensive care unit (CVICU) at Children’s Health Children’s Medical Center Dallas (CMCD) and to elucidate a regimen that would achieve the highest likelihood of appropriate vancomycin trough levels.

METHODS: A retrospective electronic chart review was performed for postoperative pediatric patients admitted to the CVICU at CMCD between January 1, 2012 and December 31, 2015. Patients admitted to the CVICU after cardiovascular surgery, 0-5 years of age, and receiving intravenous vancomycin were included. Patient demographic and clinical data was obtained, including: age, gender, race, weight, height, serum creatinine, vancomycin dosing regimen (i.e. dose, interval), postoperative vancomycin trough level, concomitant nephrotoxic medications [i.e. non-steroidal anti-inflammatory drugs (NSAIDs), diuretics, and aminoglycosides], type of cardiac surgery, use of cardiopulmonary bypass (CPB), time on CPB, and cross clamp versus non-cross clamp. The primary outcome was vancomycin trough levels and secondary outcomes include vancomycin pharmacokinetic parameters.
PL XIII-11
INTRAVENOUS ENOXAPARIN IN PEDIATRIC BURN PATIENTS: A RETROSPECTIVE CHART REVIEW. Vonya N. Streetz, Leslie K. Patatanian, INTEGRIS Baptist Medical Center, Oklahoma City, OK.

PURPOSE: The primary objective is to record the anti-Xa levels achieved with intravenous enoxaparin in pediatric burn patients. Secondary outcomes include documentation of data concerning intravenous enoxaparin’s safety profile in this population.

METHODS: The institution’s electronic medical record system was searched to identify pediatric burn patients who received intravenous enoxaparin for venous thromboembolism prophylaxis from November 26, 2016 to September 17, 2017. A retrospective chart review was used to collect data regarding patient demographics, burn wound characteristics, infection and ventilator status, renal function and hematological status, number of operative procedures and blood transfusions, length of stay, enoxaparin dose administered, anti-Xa levels (goal of 0.1 – 0.3 IU/mL), duration of enoxaparin therapy, number and magnitude of dose adjustments needed, and occurrence of bleeding events. Data was analyzed using descriptive statistics and Microsoft Excel®.

RESULTS: A total of three patients were included in the analysis. Intravenous enoxaparin doses were prepared as a 10 mg/mL concentration in normal saline and administered over 30 minutes through microbore tubing. Anti-Xa levels were routinely ordered to be drawn four hours after the end of the third infusion. Patient #1 received four doses of 40 mg (1 mg/kg) subcutaneous enoxaparin before being transitioned to the intravenous route where doses ranged from 0.28 to 0.5 mg/kg every 12 hours. Of the 14 anti-Xa levels obtained that corresponded with intravenous doses, 11 were within range at 0.2 IU/mL (nine levels) and 0.3 IU/mL (two levels) and three were supra-therapeutic at 0.4 IU/mL (two levels) and 0.5 IU/mL (one level). Patient #2 received two doses of 16 mg (1 mg/kg) and eight doses of 6.6 mg (0.5 mg/kg) subcutaneous enoxaparin before being transitioned to the intravenous route at a dose of 0.5 mg/kg every 12 hours. Two anti-Xa levels corresponding to intravenous doses were obtained and were within the desired range at 0.21 and 0.25 IU/mL. Patient #3 received two doses of 40 mg (1 mg/kg) subcutaneous enoxaparin before being transitioned to the intravenous route where doses ranged from 0.35 to 0.5 mg/kg every 12 hours. Two anti-Xa levels corresponding to intravenous doses were obtained with one level within range at 0.24 IU/mL and the other being supra-therapeutic at 0.45 IU/mL. No patient developed a venous thromboembolism, experienced a major bleed or experienced treatment failure.

CONCLUSION: Preliminary results indicate that intravenous administration of enoxaparin may be used to achieve adequate prophylactic anti-Xa levels (0.1 – 0.3 IU/mL) in pediatric burn patients. The average dosage required to achieve anti-Xa levels in the desired range correlated with those recommended for the subcutaneous route.

PL XIII-12
OPTIMIZATION OF PERI-OPERATIVE ANTIMICROBIAL REGIMENS FOR PEDIATRIC LIVER TRANSPLANT RECIPIENTS AT TEXAS CHILDREN’S HOSPITAL. Sarah E. Redmond, Dana Cerminara, Flor Munoz, Texas Children's Hospital, Houston, TX.

PURPOSE: Many different peri-operative antimicrobial regimens have been reported for orthotopic liver transplant (OLT) in pediatric patients. Infection is the most common cause of death in pediatric liver transplant patients. Texas Children’s Hospital performs approximately 40 liver transplants each year. Our aims were to ensure >80% of liver transplant patients receive appropriate peri-operative antimicrobial agents based on their prior infection history, and to reduce the number of days these patients are on prophylactic therapy by 25%. The total duration of peri-operative prophylaxis should be no longer than 72 hrs.

METHODS: This quality improvement research was approved by the appropriate Institutional Review Board. A review of current practices and regimens used for peri-operative antimicrobial prophylaxis in OLT pediatric patients was conducted. A retrospective chart review was performed to access the drug, dose, and duration of peri-operative antimicrobials. All patients who received a liver transplant at Texas Children’s Hospital from January 2015-December 2017 were identified and reviewed. An updated order set with antimicrobial guidance was created. Individualized peri-operative antimicrobial prophylaxis based on the patient’s prior infection history was encouraged for select populations. Once implemented, a prospective chart review will be performed to assess the drug, dose, and duration of peri-operative antimicrobials. Patients with cystic fibrosis, malignancy, past opportunistic infections, or...
past multi-drug resistant infections will be evaluated separately.

PRELIMINARY RESULTS: Seventy-seven patients received 79 orthotopic liver transplants from January 2015 to December 2017. Thirty patients were hospitalized prior to transplant, while 37 patients were admitted from home for transplant. For the patients without CF or malignancy that were admitted from home, the mean duration of post-operative antimicrobial prophylaxis was 6.43 days. Antimicrobials used in patients admitted from home for intra-operative prophylaxis included cefazolin, fluconazole, levofloxacin, vancomycin, and piperacillin-tazobactam; whereas, post-operative prophylaxis included cefazolin, cefepime, cefotaxim, ceftazidime, fluconazole, gentamicin, meronidazole, piperacillin-tazobactam, and vancomycin.

PL XIII-13

ROTAVIRUS VACCINATION COMPLIANCE RATES IN PEDIATRIC PATIENTS. Amber Grady, Wanda Thomas, Hilary Tice, Edward Martel, Kelsey Trimble; University Health, Shreveport, LA.

PURPOSE: According to the Center for Disease Control (CDC) only 59.2% of children 19-35 months completed their rotavirus vaccination series in 2010. The compliance rate of rotavirus is significantly lower than vaccinations such as MMR and PCV, which are 91.5% and 83.3% respectively. The purpose of this study is to evaluate the compliance rates of rotavirus vaccination completion in patients in a safety net healthcare institution. As well as to evaluate the compliance rates of patients who spent time in the neonatal intensive care unit (NICU) since they are restricted from receiving live vaccinations during their hospital stay.

METHODS: This is a single-center, retrospective chart review of patient charts between January 2014 and August 2017. Charts reviewed included patients born between January 1, 2014 and December 31, 2017. Data collection included date of birth, NICU status, date of each rotavirus vaccination, and primary care provider. The electronic medical record was utilized to create a report of all orders for rotavirus vaccinations. Based on this report the population was determined to be 3144 and it was calculated for rotavirus vaccinations. Based on this rate the NICU admissions determined to be 17.5% of the study population and were found to have a compliance of 60% as compared with 58% in the non-NICU graduate population. Of the patients who did not complete the series appropriately 52% missed 1 dose, 39% missed 2 doses, 9% did not appropriately initiate the series.

CONCLUSIONS: Data shows slightly below national average rotavirus vaccination completion compliance rates, and highlights the need for improved vaccination monitoring and education especially in high-risk populations. Based on the data, the NICU graduates have slightly higher compliance, which is likely due to more frequent clinic follow-up.

XIIIIC – PEDIATRICS / NEONATOLOGY & PSYCHIATRY

PL XIII-14

THE IMPACT OF BUCCAL DEXTROSE GEL ON THE PREVENTION OF HYPOGLYCEMIA AND NEONATAL INTENSIVE CARE UNIT ADMISSION. Lauren Yancy, Elaine Simon, Texas Health Presbyterian Hospital Dallas, Dallas, TX.

PURPOSE: Evaluate the admission rate to the neonatal intensive care unit (NICU) following administration of buccal dextrose gel, compared to the rate with the previous standard of care, for hypoglycemic neonates identified as high risk, at risk, mildly symptomatic or asymptomatic.

METHODS: This is a retrospective analysis performed before and after the implementation of a new hospital protocol using buccal dextrose gel for treating initial episodes of hypoglycemia in high risk, at risk, mildly symptomatic or asymptomatic neonates. The prior standard of care was to attempt feeding in order to raise the blood glucose above 40 mg/dL. If this was unsuccessful, the neonate would receive intravenous dextrose 10%, which requires admission to the NICU. The new protocol provides for prompt buccal administration of dextrose 40% gel if a neonate’s blood glucose remains below 47 mg/dL despite a feeding attempt. Within 40 minutes of buccal dextrose administration, the blood glucose is rechecked to assess the need for further treatment with intravenous dextrose. The pre-protocol group included neonates treated between January 1 and March 31, 2017, while the post-protocol group included neonates treated between July 1 and September 31, 2017. Patients were included if they were identified as high risk, at risk, mildly symptomatic or asymptomatic, and had a blood glucose below 40 mg/dL (pre-protocol group) or below 47 mg/dL (post-protocol group). Neonates were excluded from the study if they had been transferred from an outside hospital, were less than 35 weeks gestation, or required NICU admission for management of other conditions such as respiratory distress syndrome or seizures. The primary endpoint was the rate of NICU admission. Secondary endpoints included rate of NICU admission amongst patients with blood glucose less than 40 mg/dL, and the change in blood glucose after administration of buccal dextrose gel.

RESULTS: After screening 195 patients, 183 patients met inclusion criteria (51 in the pre-protocol group and 132 in the post-protocol group). Baseline characteristics were similar between the two groups, except for the average initial blood glucose levels, which were 35.6 ± 4.9 mg/dL, and 40.7 ± 4.6 mg/dL in the pre-protocol and post-protocol groups, respectively (p=0.001). Use of buccal dextrose gel reduced the NICU admission rate by 14.4% (23.5% vs. 9.1%; p=0.014). However, when only those patients with an initial blood glucose below 40 mg/dL were included in the analysis, the reduction in NICU admission rate was 4.9% (23.5% vs.
well as cumulative dosages of antiemetic agents had overall decreases in occurrence of emesis episodes as (median 278.1 mg/dL) and erythromycin nearly doubled tolerated feeding volumes, respectively. A limited number of patient charts (n=8) reported significant side effects which included dystonia, dyskinesia, QTc interval prolongation, pruritus and angioedema. Side effects were noted in patients receiving bethanechol (n=3), metoclopramide (n=2), or a combination of two or more agents (n=3).

CONCLUSION: This retrospective, descriptive study suggests that use of bethanechol, metoclopramide, and/or erythromycin seems to be effective in increasing tolerated feeding volumes, reducing episodes of emesis, and reducing anti-emetic use. However, prospective studies are warranted to better elucidate outcomes with pro-motility agents and the safety profile of each in children.

PL XIII-16
IMPACT OF LITHIUM ON SUICIDALITY IN THE VETERAN POPULATION. Kelsie M. Stark, Saadia A. Basit, Brian G. Mitchell, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

PURPOSE: Mood disorders are a leading cause of global disability, with lifetime risk of suicide at 10%. Lithium use in suicide prevention previously had a minor role and its place in therapy has been underestimated. There is modest data on therapeutic interventions following non-fatal suicide behavior in patients on lithium, although lithium has been clinically proven to reduce the risk of suicide. The primary and secondary objectives of this study are to evaluate the change in number of suicide attempts and suicidal ideation within three months prior to lithium initiation and within three months after the patient has been on lithium for six months.

METHODS: This study will be a single site, retrospective chart review conducted at a Veterans Affairs teaching hospital. Patients 18 years or older and with lithium duration of at least six months will be identified using the Psychotropic Drug Safety Initiative Lithium Lab Monitoring Dashboard. Patients will be excluded from the study if they have used lithium for less than six months and/or they have less than three months of data in the medical record before and/or after the six-month lithium duration. Data on suicide attempts and suicidal ideations, demographic data, lithium refill history, labs, and medication history will be collected using the Computerized Patient Record System. Medication Possession Ratio will be calculated for lithium. Descriptive statistics will be used to analyze results.

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

CONCLUSIONS: The conclusions are still pending at the time of this submission.
PL XIII-17
RISK STRATIFICATION FOR NALOXONE INTERVENTIONS AT A VETERANS AFFAIRS TEACHING HOSPITAL. Heather N. Rozen, Lisa J. Miller, Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX.

PURPOSE: The stratification tool for opioid risk mitigation (STORM) database is a national database developed by the Veterans Health Administration that facilitates patient identification and monitoring for patients on opioids with specific protocols. This database is updated nightly and displays risk scores for suicide or overdose events for patients with active opioid prescriptions. The primary objective of this project is to determine which patients in which settings [inpatient medicine, mental health, or emergency room] are at the highest risk for opioid overdose based off the STORM data and inspect what percentage of those patients are prescribed naloxone rescue kits. The secondary objective is to evaluate emergency room visits or hospitalizations due to opioid overdose.

METHODS: This study will be a single site, retrospective review of patients diagnosed with a pain disorder, PTSD, or opioid use disorder (OUD) with a diagnosis of pain disorder, PTSD, OUD, BD, MDD, substance use disorder (SUD), alone or in combination, who are determined to be at high-risk for opioid overdose through the STORM database. Patient data was obtained through the Computerized Patient Record System (CPRS). Male and female veterans, 18 years of age and older, with a diagnosis of pain disorder, PTSD, OUD, BD, MDD and SUD alone or in combination, who have more than a 10% chance of a suicide-related event or overdose in 1 year will be included in the study. Patients who have a hypersensitivity to naloxone will be excluded. Simple descriptive statistics will be used to describe incidence of high-risk opioid patients, prescribing of naloxone rescue kits per patient location, and occurrence of opioid-related hospitalizations.

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

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

PL XIII-18
IMPACT OF PROVIDER EDUCATION AND IMPLEMENTATION OF SYMPTOM-TRIGGERED THERAPY, ON OUTCOMES, FOR PATIENTS WITH ALCOHOL WITHDRAWAL – PHASE II. Karolina M. Grzesiak, Archana Banerjee, Steven J. Braun. Central Texas Veterans Health Care System, Temple, TX.

PURPOSE: Previously published studies have shown that for patients undergoing alcohol withdrawal, symptom-triggered benzodiazepine therapy based upon CIWA-Ar (Clinical Institute Withdrawal Assessment for Alcohol Scale) led to decreased total benzodiazepine use and shortened the length of hospitalizations compared to fixed-dose therapy. The objective of this project is to determine whether provider education and the implementation of a symptom-triggered benzodiazepine therapy option to the already existing fixed-dose therapy would result in similar outcomes of decreased total benzodiazepine use and shorter hospital stay.

METHODS: Quality improvement project will utilize a retrospective chart review of the computerized database, where patients will be selected based on a diagnostic code of alcohol withdrawal in addition to receiving at least one dose of a benzodiazepine while inpatient. Data will be collected for patients treated for AWS with the symptom-triggered therapy order set. The project timeframe will start with the activation of the symptom-triggered order set on 8-29-2017 and end on 6-30-2018. Patient clinical and baseline data will be collected in this study, which will include the patient’s age, gender, race, past medical history, and outpatient medication records. Other clinical data will include the inpatient medication record (including benzodiazepine usage), CIWA-Ar scores, recorded days of hospitalization, ADRs, vitals, and pertinent lab values. All data including PHI will be stored on an encrypted drive and destroyed after data analysis is complete. Data collected regarding the cumulative amount of benzodiazepine use will be compared to the already collected data from Phase I (fixed-dosing) and the new option of symptom-triggered treatment based on CIWA-Ar scores. The comparison will be analyzed to determine if the new therapy option reduced benzodiazepine use and length of stay in this population.

RESULTS: Pending

CONCLUSION: Pending

PL XIII-19
OPEN

XIVA – SOLID ORGAN TRANSPLANT

PL XIV-1
ACUTE ANTIBODY MEDIATED REJECTION TREATMENT IMPACT ON CLASS I AND CLASS II ANTI-HLA ANTIBODIES IN PEDIATRIC KIDNEY TRANSPLANT RECIPIENTS. Elisabeth Kineicade, Kelley Hitchman, Reed Hall, Ikuyo Yamaguchi, Barrett Crowther, University Health System, University of Texas Health San Antonio and University of Texas at Austin College of Pharmacy, San Antonio, TX.

PURPOSE: Characterize class I and class II anti-HLA donor specific antibodies (DSA) response to acute antibody mediated rejection (AMR) treatment in pediatric kidney transplant recipients (KTR).

METHODS: A single-center retrospective chart review of pediatric KTR receiving a renal transplant between 5/1/13 to 9/30/17 was conducted. Patients <18 years old at transplant experiencing first episode of acute AMR and received treatment were included. DSA were identified by single antigen bead Luminex® assays at: time of transplant, acute AMR diagnosis, ~30 days post treatment, and ~90 days post treatment. DSA categorized as weak: 1000 – 2999 mean fluorescence intensity (MFI); moderate: 3000 – 9999 MFI; strong: > 10,000 MFI. Treatment response was defined as MFI decrease ≥30% from diagnosis to ~30 days post treatment.

RESULTS: 62 DSA were identified from 12 patients [25 (40%) Class I and 37 (60%) Class II]. 100% of DSA were treated with IVIG and PP. 50/62 (80%) were treated with rituximab. The same 51/62 (82%) DSA achieving ≥30% MFI reduction also achieved a categorical shift. Univariate analysis revealed 24/25 (96%) class I DSA vs. 27/37 (73%)
class II DSA (p=0.0383) achieved a treatment response. Multivariate analysis revealed rituximab (p=0.0041) and lower MFI (p=0.0017) at diagnosis as independent predictors of treatment response. Matched pairs analysis for DSA MFI reduction revealed significant DSA reduction from AMR diagnosis, median 3359 (1527-11,658 IQR) MFI, to ~30 days post treatment, median 604 (239 – 2708 IQR) MFI (p<0.0001). Matched pair analysis between ~30 days- and ~90 days-post treatment revealed no significant difference between these time points for either class I DSA (p=0.21) or class II DSA (p=0.296).

CONCLUSION: Rituximab and lower MFI at AMR diagnosis were positive predictors of DSA MFI reduction. The same DSA achieved ≥30% and categorical shift, indicating ≥30% is an appropriate AMR treatment target. Treatment resulted in a significant reduction in MFI from AMR diagnosis to 30 days post treatment, without DSA MFI rebound at 90 days. Class I DSA were more likely to respond to treatment. As DSA with higher MFI were less likely to respond to treatment, a more timely AMR diagnosis could improve treatment response.

PL XIV-2
TO DETERMINE IF THERE IS A RELATIONSHIP BETWEEN USING INHALED TOBRAMYCIN AND DEVELOPMENT OF ACUTE KIDNEY INJURY IN LUNG TRANSPLANT PATIENTS. Michael Kent, Robert Portinari, Lisa Fuller, Jessica Mullins, Lisa Walsh, University of Texas Southwestern (UTSW) Medical Center, Dallas, Texas.

PURPOSE: This study will explore the utility of monitoring serum tobramycin levels in patients who develop acute kidney injury (AKI) while receiving inhaled tobramycin. The intention of this study is to improve patient safety through drug monitoring.

INCLUSION CRITERIA: Lung transplant patients receiving inhaled tobramycin. Patients admitted to UTSW Medical Center University Hospitals.

EXCLUSION CRITERIA: Patients < 18 years of age. Patients receiving intravenous tobramycin therapy.

METHODS: A retrospective chart review of previous patients who had serum tobramycin levels drawn due to suspected accumulation of inhaled tobramycin was completed. The patients were assessed for possible confounders that could increase the risk of accumulating inhaled tobramycin. Prospectively, patients will be monitored for signs of AKI. If a patient develops AKI, a tobramycin level will be ordered with the next set of morning labs. Administration time of inhaled tobramycin will be adjusted to ensure the level drawn reflects a trough. The primary end point is the measure of systemic accumulation of inhaled tobramycin.

RESULTS: Seven patients prior to this project had serum tobramycin levels drawn for possible inhaled tobramycin accumulation. All seven of the patients experienced an AKI, and had a detectable serum tobramycin level > 0.3 mcg/mL. Three patients had tobramycin levels > 1 mcg/mL, with the highest being 3.8 mcg/mL. Patients with elevated tobramycin levels had risk factors consistent with previous case reports. Common risk factors include: concurrent nephrotoxic medications (particularly vancomycin and tacrolimus), and preexisting comorbidities such as diabetes and chronic kidney disease. All patients were over the age of 50. The time from transplant to event of AKI varied from 10 to 206 days.

DISCUSSION/CONCLUSION: The safety of inhaled tobramycin in lung transplant patients is still unknown. With so many potential and inherent confounders, determining causality of AKI from inhaled tobramycin is difficult. A prospective study may yield more results about the accumulation of inhaled tobramycin, and the potential relationship to nephrotoxicity.
PL XIV-4
OUTCOMES IN KIDNEY TRANSPLANT
RECIPIENTS WITH BK VIREMIA TREATED WITH LEFLUNOMIDE. Ushma Patel, Lance Lineberger, Lisa Hutchinson, Ochsner Health System, New Orleans, Louisiana.

PURPOSE: The BK virus is a member of the polyomavirus family and upwards of 90% of the general adult population is found to be seropositive. In most infected individuals, the BK virus remains dormant in the genitourinary tract. However, in those who have undergone kidney transplantation, the presence of immunosuppression can cause reactivation of the latent virus. Reactivation can lead to BK nephropathy in kidney transplant patients. The incidence of BK nephropathy in this population is 1-10% with a risk of graft loss in up to 65% of patients. Currently, there is no consensus on the appropriate treatment of BK viremia, but the reduction of maintenance immunosuppression is paramount to clearance of the virus. There have also been purposed alternative treatment options such as the adjunctive use leflunomide, an immunomodulatory agent that inhibits pyrimidine synthesis. The aim of this study is to determine the efficacy of leflunomide in the resolution of BK viremia as well as prevent graft loss.

METHODS: Single-center, retrospective study comparing the outcomes of patients with a kidney transplant at Ochsner Medical Center from January 1, 2013 to January 1, 2017 who were diagnosed with BK viremia treated with reduction maintenance immunosuppression alone versus the utilization of leflunomide in addition to standard therapy. BK viral clearance and graft loss were assessed as primary efficacy outcomes in this study.

RESULTS: An interim analysis of 100 patients who were 2-6 months (n=60) and 6-12 months (n=40) post-heart transplant was performed. Patient characteristics include: 75% male, mean age of 56 years [SD] ± 11.03, and 52% Caucasian. This study included numerous high risk patients: 34% with panel reactive antibody (PRA) > 10%, 12% with positive donor specific antibodies (DSAs), 3% had received a second heart transplant, and 15% had cytomegalovirus (CMV) donor-recipient mismatch. The mean AlloMap score was 26.83 ± 7.5 in the 2-6 months post-transplant group and 28.15 ± 6.24 in the 6-12 months post-transplant group. Overall, 34% of patients had a positive AlloMap score based on their respective time post-transplant. Six out of 34 positive AlloMap scores predicted rejection within the next 3 months. Seventeen out of 34 positive AlloMap scores were confounded by CMV, previous rejection within 3 months, or post-transplant ischemic injury. All 3 patients that had received a second heart transplant had positive AlloMap scores. AlloMap scores were not frequently used to adjust IS regimens, and scores only lead to a change in IS regimens in 6% of the 2-6 month group and 9% of the 6-12 month group, corresponding to p=0.086.

CONCLUSION: Based on the interim data, due to the high risk nature of our patient population, there is little correlation in positive AlloMap scores in predicting ACR, and AlloMap scores were not frequently used to adjust IS regimens at our institution.

PL XIV-5
USE OF ALLOMAP TESTING AS A PREDICTOR OF EARLY ACUTE CELLULAR REJECTION AND IMMUNOSUPPRESSION MANAGEMENT. Mary Sun, Raymond Yau, Melissa Manson, CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, TX.

PURPOSE: To evaluate the use of AlloMap scores in predicting rejection and its utility for immunosuppressant (IS) management in heart transplant patients at our institution.

METHODS: This is a retrospective, observational study evaluating heart transplant patients admitted to Baylor St. Luke’s Medical Center, from January 1, 2012 through December 31, 2017 with an AlloMap test score. A list of all heart transplant patients with at least one AlloMap test score on file who fit the inclusion and exclusion criteria was obtained from the electronic health record database. The primary endpoint was acute cellular rejection (ACR) rates within 3 months of an AlloMap test, as confirmed on endomyocardial biopsy (EMB), and the influence of AlloMap scores on the augmentation of IS regimens. Descriptive statistics was utilized to analyze the data. A chi-squared test was performed to assess the difference in use of AlloMap scores to adjust IS regimens in patients 2-6 month versus 6-12 months post-heart transplant.

RESULTS: An interim analysis of 104 patients after kidney (n=53) or heart (n=51) transplant was performed. Patient characteristics include: 81% male, mean age of 54 years [SD] ± 13.4, and 45% Caucasian. Overall, 25% (n=26) of patients experienced at least one episode of biopsy proven rejection within 90 days of transplant and 30% (n=31) of patients within 1 year of transplant. For the heart transplant patients, 42.3% in the non-overweight group experienced at least one episode of biopsy proven rejection (BPR) within 90 days compared to 40% in the overweight group, corresponding to p= 0.8671. Within 1 year post heart
transplant. 42.3% in the non-overweight group experienced at least one episode of BPR compared to 48% in the overweight group, corresponding to p=0.683. For the kidney transplant patients, 4% in the non-overweight group experienced at least one episode of biopsy proven rejection within 90 days compared to 14.3% in the overweight group, corresponding to p=0.2009. Within 1 year post kidney transplant, 2% in the non-overweight group experienced at least one episode of BPR compared to 6% in the overweight group, corresponding to p=0.7213. There was no significant difference in biopsy proven rejection between both groups within 90 days and 1 year of transplant.

CONCLUSION: Based on the interim data, there was no statistically significant difference in biopsy-proven rejections between both groups.

PL XIV-7 - OPEN

XIVB – PHARMACOECONOMICS & OUTCOMES RESEARCH

PL XIV-8
PHARMACOECONOMIC STUDY COMPARING THE COSTS ASSOCIATED WITH NEOSTIGMINE VERSUS SUGAMMADEX USE IN A TERTIARY HOSPITAL’S OPERATING ROOM AND POST-ANESTHESIA CARE UNIT. Julie John, Greg Perry, Jeremie Perry, Viktoria Guttenberg, Nicole Asonganyi, Hendrick Medical Center and Texas Tech University Health Sciences Center School of Pharmacy, Abilene, TX.

PURPOSE: Sugammadex is a novel rapid acting neuromuscular blockade reversal often overlooked in the interest of limiting healthcare costs. Neostigmine, while cheaper, is associated with longer operating room (OR) and post-anesthesia care unit (PACU) length of stay along with more management of side effects. This study compares the costs associated with neostigmine use vs. sugammadex use in patients recovering from rocuronium or vecuronium induced neuromuscular blockade.

METHODS: This study is a retrospective, single-center, control-active, cohort study including patients who have recovered from rocuronium or vecuronium induced neuromuscular blockade with neostigmine or sugammadex in the last 12 months identified by the electronic medical record system. Patients less than 18 years of age, pregnant or breastfeeding women, and individuals with an allergy to neuromuscular blockers or reversal agents will be excluded. The aim of this study is to compare the costs associated with sugammadex use vs. neostigmine use for the reversal of neuromuscular blockade with rocuronium or vecuronium. The following data will be collected: demographic information, vitals, American Society of Anesthesiologist (ASA) physical status classification scores, administration time of neuromuscular blocker and reversal agent time, time to discharge from the operating room (OR) and then discharge from the post-anesthesia care unit (PACU), reintubation due to residual blockade, and side effect management of either agent including bradycardia, nausea, and vomiting. Health care costs associated with the use and management of sugammadex versus the use and management of neostigmine based on the data collected will be reported.

RESULTS: N/A

CONCLUSIONS: N/A

PL XIV-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 Lecture Capture appropriately, and if this use affects their academic performance. In addition, to evaluate students’ perceptions of Lecture Capture.

METHODS: This prospective, survey-based study will assess students’ use of the lecture recording software, Lecture Capture, available at UIW FSOP. A survey will be 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 will then be determined if they are using Lecture Capture appropriately (i.e. listening to full lectures over or listening to lecture segments to clarify confusing or complicated areas). The primary outcome is the correlation between semester GPA and appropriate use of Lecture Capture. The secondary outcomes include students’ perception of Lecture Capture and its effect on their academic performance.

RESULTS: Pending data collection and analysis. Survey will be administered in March-April of 2018 and in October-November 2018.

CONCLUSION: Pending data collection and analysis.

PL XIV-10
A PRELIMINARY ECONOMIC EVALUATION OF LIPID SCREENING AND TREATMENT METHODS IN YOUTH AND ADOLESCENTS. Linda Chen, Karen Rascatt, Catherine McNeal, Paul Godley Baylor Scott & White Health, Temple, TX.

PURPOSE: In 2011, the National Heart, Lung, and Blood Institute began recommending universal lipid screening of all youth and adolescents at ages 9-11 and 17-21 years of age. This recommendation was met with controversy due to limited effectiveness and cost-effectiveness evidence for universal screening over the previously recommended selective screening. This study aims to estimate cost and low density lipoprotein-cholesterol (LDL-C) differences of the two screening methods in a U.S. pediatric population from age 10 to age 21.

METHODS: A Markov model was employed to estimate the costs and benefits of two screening strategies, universal and selective, in a population of 10 year olds in the United States. The universal arm followed the 2011 NHLBI recommendations while the selective arm followed only the selective screening portion of the recommendations. The cohort was followed for 11 years using six-month cycle lengths. Individuals could cycle through five health states: unknown lipid levels, normal lipid levels, abnormal lipid levels on non-pharmacological therapy, abnormal lipid levels on pharmacological therapy, and dead. Transition probabilities were derived from NHANES reports and other
published literature. Medical and drugs costs were obtained from Medicare fee schedules and Redbook, respectively. Costs were adjusted to 2017 U.S. Dollars and discounted at 3% annually. Costs common to both cohorts were excluded from the model. Benefits were defined as percent changes in LDL-C levels and derived from published literature.

RESULTS: In the base-case scenario, universal screening was $859 with a 1.01% LDL-C reduction while selective screening was $266 with a 0.2% LDL-C reduction. Universal screening would cost an additional $729 per child to reduce LDL-C by an additional 1%. About 65% of children would have been screened for lipids in the selective screening arm, and selective screening would fail to detect 58% of dyslipemias.

CONCLUSION: These results provide a preliminary look at direct healthcare costs and LDL-C differences in a pediatric population for the two screening methods while also forming the basis for a lifetime economic model.

PL XIV-11
THE IMPACT OF A VALUE-BASED INSURANCE DESIGN FOR CHRONIC PREVENTIVE MEDICATIONS ON ADHERENCE AND PERSISTENCE IN AN INTEGRATED DELIVERY SYSTEM. Esther Yi, Kiumars Zolfaghari, Linda Chen, Paul Godley, Jeffrey Michel, Karen Rascati, Baylor Scott and White Health, Temple, TX.

PURPOSE: To evaluate the effect of reduced copays on medication adherence rates for specific chronic and preventive medications (e.g. diabetes, respiratory diseases, anticoagulation) in an integrated delivery system (IDS).

METHODS: Patients with age > 18 and at least one pharmacy claim for selected chronic and preventive medications between April 1, 2015 and March 31, 2017 were selected. Medication adherence was measured by estimating the number of days of medication available to each patient or the “proportion of days covered” (PDC) every 3 months for 12 months before and after the copay reduction program implementation on April 1, 2016. The analysis included a repeated measure analysis of variance to assess the trends before and after the intervention date to estimate the interaction between the intervention, trend, medication class, and other variables of interest. Independent t tests compared the mean change in post-period versus pre-period adherence within groups. This study used existing plan pharmacy claims, medical claims, and electronic medical record (EMR) data from commercially insured patients in the IDS.

RESULTS: A total of 10 drug classes from 3 therapeutic areas were observed. Post-period average quarterly PDC’s increased 5% from the pre-period (t=5.1, 59% vs 54%, p<.0001). Diabetes (76% vs 71%), respiratory diseases (48% vs 44%), and anticoagulation (71% vs 69%) all showed an increase in average PDC in the post-intervention period. The regression model supported the effect of the value-based insurance program on increasing adherence after the intervention (p<.0001).

CONCLUSION: This policy produced an intended effect. We observed an increase in overall adherence across all drug classes. This study supports the ability of copay reductions to increase the use of essential medications and improve clinical outcomes without increasing overall health spending.

PL XIV-12
SUGAMMADEX COMPARED WITH NEOSTIGMINE/GLYCOPYRROLATE FOR REVERSAL OF NEUROMUSCULAR BLOCKADE: A PROSPECTIVE ANALYSIS OF TOTAL PACU TIME, RESPONSIVENESS, AND ECONOMIC EVALUATION. Kayla L. Hodges, Yoon Jung Lee, Baptist St. Anthony’s Hospital, Amarillo, TX.

PURPOSE: Studies have previously shown sugammadex works faster and more effectively than neostigmine/glycopyrrolate at reversal of neuromuscular blockade. The purpose of this study was to evaluate for differences in patient time spent in the operating room (OR), post-anesthesia care unit (PACU), and patient responsiveness between sugammadex compared with neostigmine/glycopyrrolate at a small surgical center after a temporary formulary change. Additionally we wanted to evaluate if there was any potential cost benefit associated with sugammadex use.

METHODS: We conducted a prospective analysis of OR time, PACU time, and responsiveness at Panhandle Surgical Center of Amarillo, Texas of 154 patients undergoing planned surgery. A timeline was prospectively set to change availability from sugammadex to neostigmine/glycopyrrolate for a three week period. The study period was ended early, after two and a half weeks after termination by surgeons due to perceived danger after one patient required rescue sugammadex to prevent intubation. Data was then collected for five weeks to get an equal number of patients utilizing sugammadex. We then evaluated an approximated cost difference taking into account the difference in OR and PACU time, projecting an estimated potential savings after one year of use.

RESULTS: We evaluated 76 patients that received neostigmine/glycopyrrolate and 76 patients that received sugammadex post-operatively for neuromuscular blockade reversal. There was an average decrease in total OR time of 6 min (neostigmine/glycopyrrolate range 32-211 minutes and sugammadex 40-151 minutes). There was an average decrease in total PACU time of 6 min (neostigmine/glycopyrrolate range 32-154 minutes and sugammadex 28-94 minutes). Additionally the percent of patients fully awake at the end of PACU stay was higher in the sugammadex group compared with neostigmine/glycopyrrolate group (86% vs 79% respectively).

CONCLUSION: The use of sugammadex decreased the time in OR and PACU by an average of 12 minutes per patient, providing a potential savings of $524.52 per patient. The additional cost of using sugammadex is $77.40 per person when compared to neostigmine/glycopyrrolate (estimated using average wholesale price for a 75 kg patient). This is suggestive of a potential cost savings with sugammadex of $447.12 per patient. If extrapolated out to a year, this could mean a potential savings of $447,120 per year. Sugammadex is a potentially viable economical option for Panhandle Surgical Center for the routine reversal of neuromuscular blockade.

PL XIV-13
MULTI-SITE STUDY ON THE IMPACT OF CYP3A4/P-GP INTERACTING MEDICATIONS ON CLINICAL OUTCOMES IN RIVAROXABAN PATIENTS. Elmor D. Pineda, Joseph A. Goble, Kiumars
Zolfaghari, Paul J. Godley, Gregory Dehmer, Jeffrey Michel, Baylor Scott & White Health, Temple, TX.

**PURPOSE:** To determine the association of CYP3A4 and P-gp inhibitor use with time to bleed and thromboembolism (TE) (i.e., stroke/TIA, deep vein thrombosis, and pulmonary embolism) in patients with nonvalvular atrial fibrillation (afib) managed on rivaroxaban therapy from three large integrated delivery systems

**METHODS:** This was a retrospective cohort study that combined prescription and medical claims data from three large integrated delivery systems located in Texas, Pennsylvania, and Michigan from 2011 through 2017. Outpatient pharmacy claims were used to characterize initiation and longitudinal exposure to rivaroxaban and CYP3A4/P-gp inhibitors. The first prescription for rivaroxaban during the enrollment period served as the index date. Bleeding and TE were captured in medical claims using ICD-9 and ICD-10 codes during the 12-month post-index period. Continuous health plan enrollment was verified for 12 months pre and post index date. Time to bleeding was described using Kaplan-Meier analysis. A Cox proportional hazards model adjusting for differences among the treatment cohorts was used to assess the risk of bleeding. Covariates in the adjusted analyses included age, gender, pre-index warfarin use (yes/no), bleeding during the pre-index period (yes/no), and Charlson Comorbidity Index (CCI) score.

**RESULTS:** Preliminary data from our single-site study identified 729 patients on rivaroxaban therapy and 313 patients met criteria for inclusion in the CIM user cohort and were compared with the remaining CIM non-user cohort (n=208).

**CONCLUSIONS:** Pending
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