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A-01: Optimizing Weight Based Heparin Order Accuracy with a Multidisciplinary Approach
Steven Knight, RPh, PharmD, BCPS, CMTM; Ingrid Kindipan, PhD, RN, CCRN; Cindy Melis, RNC

**Project Description:** The AHA/ACC Clinical Performance and Quality Measures (QM) guidelines update requires the limitation of initial heparin doses for acute coronary syndrome and acute myocardial infarction patients. Specifically, the Action Data Registry collects information on patients that receive excessive initial weight based heparin doses. Any patients receiving doses above the recommended initial dose are considered fall outs. Our project included a system-wide approval of an updated pharmacy rounding calculator, education of nursing staff, and implementation of the dosing rounding calculations in Epic.

**SMART Aim Statement:** Reduce the incidence of initial heparin dose fall outs in ACS/AMI patients by 50% at MCMC by August 2017.

**Actions Taken:**
- Reviewed the updated pharmacy heparin dosing calculator with our Pharmacy-Nursing Committee, Nursing Leadership Committee, and Nursing Collaborative Practice group at MCMC.
- Conducted education in the nursing units via the nurse educators and during pharmacy staff meetings.
- Updated the infusion pump library to default to the ACS/AMI starting doses of 12 units/kg/hour maximum with alerts to not exceed the Action Data Registry’s limit of 1000 units/hour.
- Verified the implemented calculations in Epic were accurately rounding after the go-live.
- Compared the five month period of time before and after Epic go-live for percentage rates of correct rounding of weight based heparin infusions.

**Summary of Response:** Collaborating between nursing, pharmacy, and educators, we were able to successfully implement accurate rounding equations. Furthermore, we were able to ensure nurse awareness of verifying correct starting doses at the bedside during initiation of weight based heparin infusions.

A-02: Do the ‘Genes’ Fit? Starting a Pharmacogenetics Testing Service
DA Pandya, LM Cuellar
TIRR Memorial Hermann, Houston, Texas

**Background:** Pharmacogenetics is the study of how genes affect the body’s response to medications in terms of metabolic pathways and adverse effects. The role of genetic testing has yet to be fully integrated into practice despite considerable support in research. Several key components were identified in the process of establishing a pharmacist-managed pharmacogenetics testing service.

**Objectives:** To outline the steps taken to offer a pharmacogenetics testing service.

**Procedure(s):** 8 steps were taken to start the service. Initially, we had to assess the need for the service by identifying patient needs and using a provider survey. Second, was the selection of a reference lab. There are many different type of tests available, so careful evaluation is necessary. Infrastructure needs were gauged which included labor, facility, and electronic medical records (EMR). Contracts with reference labs required legal review and laboratory leadership approval. Next is the development of documentation for pharmacists and posting of
A-03: Resource Based Schedule for Integrated Pharmacists
SE Lake-Wallace, LM Cuellar
TIRR Memorial Hermann, Houston, Texas

Background: TIRR Memorial Hermann has a well-established integrated pharmacist staffing model with all clinical staff having a 50-50 split of operational and dedicated clinical time. Previously schedules were established to divide time on a daily basis. A new model was created to consider the operational time as a pool to be allocated across the week. Non-pharmacy staff members also needed access to pharmacists’ schedule to facilitate meetings.

Objectives: To utilize a common platform to schedule, monitor, and share clinical, operational time allotments. Maximize pharmacist time to support new patient services while minimizing use of supplemental staff and budget expectations. Integrate safety strategies into the staffing model around hand offs and human factors for attention and focus.

Methods: Established general guidelines for staffing. Established Microsoft Outlook® scheduling process for clinical, operational time, and assigned shift. This included established time for medication management rounds with assigned physicians. Created monitoring process for operational productivity.

Results: Consistently able to achieve goals utilizing 90% of operational time with no increase in supplemental staffing use. Common platform for schedules created and utilized by all staff.

Conclusions: Resource based scheduling increases the clinical time for pharmacist to aid in service expansion and staff satisfaction. Microsoft Outlook® is an effective tool for creating a common platform for schedules that are available to the department and facility. Microsoft Outlook® has not been an effective tool for gathering productivity data. A significant time commitment is necessary for creating calendars and monitoring.

Disclosures: SE Lake-Wallace serves on the TSHP R&E Poster Review Committee. LM Cuellar nothing to disclose.

A-04: Hardwiring the pharmacist role on the code blue team
Terence Chau, Sapan Desai, Shreya Parekh, Caryn Bermeo, Martha Ouma, Rodney Cox
Memorial Hermann Memorial City Medical Center, Houston, Texas
Background: Management of life-threatening emergencies requires the integration of a multidisciplinary team to maximize outcomes. Prior to July 2017, pharmacist attendance at Code Blue events was not consistent and poorly documented at our facility. Feedback from various healthcare professionals supported increased pharmacy presence at such emergencies. As a result, a major strategic planning initiative for the department of pharmacy included efforts aimed at increasing and sustaining pharmacist code coverage.

Objective: To analyze the factors related to inconsistent pharmacist code attendance and to develop strategies to improve pharmacist code presence at a community hospital.

Methods: A cause and effect analysis was conducted to identify all potential causes of inconsistent pharmacist code attendance. Solutions involving a multidisciplinary effort were developed to target these factors. Pharmacist code attendance was collected over two fiscal years (FY).

Results: In the first year of the strategic initiative, average monthly pharmacist code attendance was 75.9% (overall attendance was 77.4% for FY17). Average monthly pharmacist code attendance improved to 89.3% seven months into the second year of the strategic initiative (overall year-to-date attendance was 89.5% for FY18).

Conclusions: An approach involving multidisciplinary efforts was successful in improving pharmacist code attendance our facility. Frequent feedback on performance and continued development of training scenarios assisted in sustaining pharmacist attendance into the second year of the strategic initiative. A significant factor impacting pharmacist attendance was inconsistent hospital-wide announcement of Code Blue events in the surgical and intensive care settings.

Disclosures: The authors of this presentation have nothing to disclose.

A-05: Use of a Nurse Auditor for Averting Drug Diversion
AJ Ries, J Fisher, JW McCoy
Christus Mother Frances Hospital, Tyler, TX

Background: Diversion of controlled substances (CS) within the healthcare setting can pose significant risks to not only patients, but to the diverter and the healthcare organization. Establishing a comprehensive CS diversion prevention program allows organizations to review compliance with current processes and proactively prevent diversion.

Objective: To describe the CS diversion, detection and prevention program at CHRISTUS Mother Frances Hospital-Tyler with the implementation of a nurse auditor position based in the Department of Pharmacy.

Methods: Historically, retrospective audits of CS transactions were conducted by one pharmacist to identify errors on inpatient nursing units on a monthly basis. In August 2016, a nurse auditor position was approved to increase the scope of CS reviews to include random chart audits, focused individual associate audits, and automated dispensing cabinet CS override transactions. Additionally, the audit nurse provides a nursing peer-to-peer point of contact for follow-up and documentation of error resolution.

Results: In 2007, 650 transactions/month were reviewed with an error rate of 14.5%. From 2008-2016, 932 transactions/month on average were reviewed with a corresponding error rate of 6.4%. However, follow-up for error resolution was not routinely completed. The nurse auditor follows up with nursing leadership to ensure education, counselling, or other action has occurred to close the loop. In 2014, nursing leadership response rate was 5.8%. In 2017, the nurse auditor reviewed approximately 1,946 transactions/month with an error rate of 2.2%. The response rate increased to 86%.

Conclusion: The nurse auditor more than doubled the number of transactions reviewed with improved follow-up through peer-to-peer communication.
Category: Practitioner – Clinical

C-01: Enhancing Nutritional Therapy in Patients Requiring Partial Parenteral Nutrition

M D Smith, A Nguyen, S Knight, J Connor
Methodist Charlton Medical Center, Dallas, Texas

Background: Clinimix® is an IV source of calories and protein for patients requiring parental nutrition when oral or enteral nutrition is not possible, insufficient, or contraindicated. Clinimix® E 4.25/5 is the only premixed parenteral nutrition on formulary at our institution. The default infusion rate for Clinimix® is 41.67 mL/hr and provides patients with 340 Kcal/day.

Objective: The objective of this study was to evaluate the appropriateness of our formulary peripheral parenteral nutrition (PPN) product and to determine if another formulation of PPN would provide a greater source of calories for our patients.

Methods: A retrospective chart review of all patients who received at least one dose of Clinimix® from August 1, 2016 through September 30, 2016 was performed. Data collected included age, BMI, caloric requirements, indication for use, diet, ability to tolerate oral medications, prescribing specialty, infusion route and rate, and caloric requirements. Indications for PPN were based on guideline recommendations and clinical use criteria within our hospital.

Results: 47 patients were included in the study. 11 patients (23.4%) received Clinimix® appropriately as defined by the study criteria. The average caloric requirement was 1161 (917 – 2527) kcal. The average calories provided by Clinimix® was 352 (340-578) kcal. This resulted in an average caloric deficit of 77%.

Conclusion: Clinimix® was not appropriately prescribed within our institution, nor did it provide an adequate number of calories to our patients. In reviewing therapeutically similar products, we were able to find a product that would reduce the caloric deficit from 77% to 16%.

Disclosure: The authors of this presentation have nothing to disclose.

C-02: Estimation of Glomerular Filtration Rate from Vancomycin Levels During Acute Kidney Injury Recovery

Steven Knight, RPh, PharmD, BCPS1, Nicole Nguyen2, Benjamin Bolding3, Mario Robles-Franceschini, MD4, Carlos Pancorvo, MD5. 1Methodist Charlton Medical Center 2University of Houston College of Pharmacy, Houston Texas, 3University of North Texas College of Pharmacy, Fort Worth Texas, 4Nephrology Fellowship, Methodist Dallas Medical Center, Dallas Texas, 5Dallas Nephrology Associates, Dallas TX.
**Background:** During the extension and recovery phase of Acute Kidney Injury the creatinine may give an unreliable estimation of GFR. Vancomycin is one of the most commonly used antibiotics which is primarily excreted via glomerular filtration, and its levels are monitored routinely during therapy.

**Objective:** The primary objective of this exercise is to investigate if GFR calculated from the change in interval random vancomycin levels correlates with the actual GFR.

**Method:** The patient is a 71 y/o woman on outpatient dialysis for a month due to Acute Kidney Injury over Stage 3 Chronic Kidney Disease. She was admitted to the hospital with a catheter related infection and treated with vancomycin. On admission it was noted that she had a normal urine output and creatinine of 1.4mg/dL, a day after receiving dialysis. However, the creatinine was rising, which did not reflect the improving renal function, as steady state had not been achieved. The patient was on Vancomycin therapy and drug levels were being monitored. Since Vancomycin is mostly excreted unchanged in the urine via glomerular filtration, GFR can be calculated from known pharmacokinetic equations to objectively determine renal function. Five Vancomycin concentration levels were taken approximately 6 hours apart during two Vancomycin dose administrations. The levels were entered into the elimination rate constant equation based on the difference in each serum vancomycin level \( Ke = \ln(C1)-\ln(C2)/(t2-t1) \) to estimate the patient’s vancomycin clearance \( Cl= Ke x Vd \).

**Results:** The results of the calculated GFR indicated an improvement in GFR between vancomycin doses, which reinforced the clinical assumption. The patient’s creatinine plateaued after and started decreasing and did not need further dialysis treatment.

**Conclusion:** This exercise of calculating GFR from vancomycin clearance may indicate that random vancomycin levels can be utilized as another tool in estimation of renal function in patients which are not in steady state.

**C-03: Reduction in the Incidence of Healthcare Facility-Onset Clostridium difficile with Bio-K+®**

T Tran, E Attia, S Thakral, PJ Shah
Houston Methodist Sugar Land Hospital, Sugar Land, TX

**Background:** Antimicrobial therapy, a known risk factor to Clostridium difficile infections (CDI), disrupts the normal colonic flora, allowing C. difficile to multiply and release toxins. Probiotics are live microorganisms that help balance the gastrointestinal tract’s microbiome. In 2016, Houston Methodist Sugar Land experienced a surge in healthcare facility-onset (HO)-CDI. One of the hospital’s multi-pronged approaches to combat this surge was to have a pharmacy run probiotic initiation protocol.

**Objectives:** To decrease the rate of HO-CDI with the use of probiotic, Bio-K+®

**Methods:** This was an open-label, prospective, single-center study conducted between August 1, 2016 and July 31, 2017. All adult patients on a pilot medical-surgical unit and on antibiotic therapy were initiated on a probiotic, Bio-K+®, by a clinical pharmacist for this unit. Patients were excluded if they were immunocompromised, could not swallow capsules, had a lactose allergy or if they had acute pancreatitis. Primary outcome was the incidence of HO-CDI for the pilot unit.

**Results:** After implementation of Bio-K+® for patients on antibiotic therapy, there was a drastic decrease in the incidence of HO-CDI. For the pilot unit, the mean rate of HO-CDI cases/10,000 patient days from August 1, 2016 – July 31, 2017 was 0.22 (±0.51). Comparatively, the mean HO-CDI rate was 2.1 (±1.7) for the pilot unit from August 1, 2015 – July 31, 2016; OR 8.7, 95% CI 2.6-28.7; p=0.0004

**Conclusion:** The hospital’s multi-pronged approach, which included a pharmacy run probiotic (Bio-K+®) initiation protocol led to a significant decrease in HO-CDI.

**Disclosures:** All authors have nothing to disclose.
C-04: Impact of Hospital Intervention Smoking Cessation Program on 6 Month Cessation Rates in the Texas Panhandle
RL Basinger, SD James, CR Bryant, R Pahuja
Texas Tech University Health Sciences Center School of Pharmacy, Amarillo, Texas Practitioner-Clinical

**Background:** 2016 smoking rates in Texas were 15%, while in Potter and Randall counties in Amarillo, were 18% and 14%, respectively. Cessation rates of adult smokers is 7.4%, with lower rates seen in persons with lower education level and under or uninsured. Very little is published regarding cessation rates of programs specifically targeting low income hospitalized patients.

**Objective:** Determine the smoking cessation rates of patients enrolled in a hospital intervention smoking cessation program.

**Methods:** Hospitalized patients with smoking related admissions who were active smokers were provided initial education, nicotine replacement therapy (NRT) while hospitalized and a free refill at discharge. They were encouraged to attend free community-based cessation group classes. Patients were contacted by phone 6-7 months later to determine smoking status. Patients that were unreachable or refused to be interviewed were considered treatment failures. Patients who left the hospital without their NRT were not included in the analysis.

**Results:** 193 patients were included in the study, but only 59 were reached and consented to be interviewed. Total rates for 7-day and 30-day cessation were 7.3% and 6.7%, respectively. Cessation rates of patients who consented to be interviewed were 23.7% and 22%, respectively. Of those who had continued to smoke, 59.6% were interested in attempting to quit again.

**Conclusions:** A hospital intervention smoking cessation program is successful in helping current smokers admitted with smoking related conditions quit smoking in rates similar to currently available methods.

**Disclosures:** All authors have nothing to disclose.

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C-05: Review of medications used for patients with disorders of consciousness and the impact on level of consciousness
DM Crow, DD El-Dana, SE Lake-Wallace
TIRR Memorial Hermann, Houston, TX

**Background:** There is a paucity of information on the effect of medications on the level of consciousness in patients with disorders of consciousness (DOC). Central nervous stimulants and medications that alter dopamine availability have been used to aid in functional recovery in DOC. The JFK Coma Recovery Scale-Revised (CRS-R) is the most sensitive and valid tool in assessing the level of consciousness in patients with DOC.

**Objective:** Describe the medication(s) used to aid functional recovery in the DOC patient population and the impact on CRS-R scores and the level of consciousness.

**Method:** A retrospective chart review of all patients admitted to the TIRR DOC program that received CRS-R assessments between October 1, 2016 and September 30, 2017. Data collected included age, gender, diagnosis, onset of injury, date of admission/discharge, date of initial/final assessment, CRS-R initial/ final and subscale scores, and relevant medications and dose at final assessment.
Result: 47 patients were included, 74% with traumatic brain injury (TBI) and 26% with non-TBI. Twenty-six (26) % of patients emerged. Amantadine was the most commonly used medication. The highest final CRS-R scores were associated with amantadine/bromocriptine, amantadine/modafinil, and methylphenidate though sample size in these groups was low. The shortest time to emergence was associated with amantadine and amantadine/bromocriptine.

Conclusion: From this review, amantadine continues to show benefit in treating DOC patients as seen in earlier studies. There is potential for combinations of amantadine and bromocriptine or modafinil to have increased benefit and is a promising area for future research.

Disclosure: The authors have nothing to disclose.

C-06: The Interprofessional Management of Psychotropic Medications in Elderly Dementia Patients Residing at an Assisted Living Center
A Farinde
Webster, Texas

Background: The complex and progressive nature of dementia requires the involvement of multiple disciplines in order to achieve optimal patient care. The collaborative efforts of multiple disciplines is critically important when it comes to the selection, adjustment, and ongoing management of psychotropic medications.

Objectives: Define interprofessional managements among health care professionals. Discuss the unique relationship that exists between the disciplines of psychiatry, pharmacy, and psychology in the management of psychotropic medications. Examine the interprofessional approach to psychotropic medication as a result of the examination of the collaboration between the disciplines of psychiatry, pharmacy, and psychology.

Methods: The study will involve the examination of antipsychotics, antidepressants, and anxiolytics use during a six-month time frame with an evaluation of medication initiations, dosage adjustments, and ongoing monitoring with the involvement of psychiatry, pharmacy, and psychology.

Results: The results of this study are currently pending analysis of the collected data but preliminary analysis indicate at 25% improvement clinical outcome (Brief Agitation Rating Scale) and 20% on the Neuropsychiatric Inventory as a result of interprofessional approach to psychotropic medication management in elderly dementia patients.

Conclusion: This study will seek to examine the potential benefits that may be observed with psychotropic medication management through the presence of an interprofessional approach that involves the collaborative efforts of psychiatry, pharmacy, and psychology.

Disclosure: The presenter has nothing to disclose.

Category: Practitioner – Education

E-01: Influenza Epidemic 2017-2018
S Prabhu, JA Kurian, L Gonzalez, PH Patel
TAMHSC Irma Lerma Rangel College of Pharmacy, Kingsville, Texas
**Background:** The 2017-2018 Influenza season has been one of the worst ones yet. There has been an increase in both cases and hospitalization rates. Influenza is a respiratory illness caused by the influenza virus which is easily transmitted. The virus causes systemic and respiratory issues. If left untreated, influenza can lead to other complications. It is recommended for the community to take preventative measures.

**Objective:** The objective of this poster is to educate pharmacists, pharmacy students and seminar attendees on prevention, various treatment regimen, and current statistics of the influenza epidemic.

**Methods:** Keywords for research included: influenza virus, orthomyxoviridae, antiviral medications, prevention and statistics. Information from the CDC, Goodman and Gillman’s The Pharmacology Basis of Therapeutics, and Dipiro’s Pharmacotherapy: A Pathophysiological Approach will be provided via the poster to educate pharmacists, pharmacy students, and seminar attendees on the current epidemic statistics, preventative measures, and medications available.

**Results:** Based on current statistics, the most prevalent influenza this season is the H3N2 strain causing an increased rate of pneumonia and influenza mortality, pediatric mortality, outpatient illness, and hospitalizations.

**Conclusions:** Influenza is an epidemic that affects thousands of people annually in the United States. As pharmacists, it is our job to educate patients on taking the necessary preventative measures such as vaccinations. Various antiviral medication routes are available for treatment such as oral, IV and inhalation. Continual education on the influenza epidemic is vital due to the increasing number of reported cases this season.

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

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**E-02: Economic Diversity in Advanced Pharmacy Practice Experiences (APPE)**

JT Copeland
University of the Incarnate Word, San Antonio, TX

**Background:** In addition to the ACPE required community APPE, fourth year pharmacy students (P4) may participate in elective APPEs in a community practice setting. Historically, the majority of UIW students completed APPEs in affluent pharmacy practice settings. This limited student interaction with patients in an economically depressed area and resulted in underutilization of quality sites and preceptors in economically depressed areas.

**Objective:** Enhance P4 participation in economically diverse practice settings.

**Methods:** Prior to APPE assignments, the community practice area was divided into two economic areas: zip codes with less than 10% of households falling below the poverty level and zip codes with greater than 10% of households falling below the poverty level. If a student performs one or more elective Community APPEs, at least one APPE (required Community or elective Community) must be from a different socio-economic area.

**Results:** Students provided patient care in economically diverse practice settings. Utilization of quality preceptors and sites in economically depressed areas increased.

**Conclusions:** Diversification requirements will continue.

**Disclosure:** None

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P1-01: Comparative study of sugammadex versus neostigmine in reversal of neuromuscular blockade of rocuronium or vecuronium
Janay Bailey, Mark Wilson, Uche Mbadugha, Nana Akuffo, George Udeani
Corpus Christi Medical Center, Corpus Christi, Texas

**Background:** Studies demonstrating the incidence of postoperative residual block with sugammadex compared to neostigmine are limited, although existing data is promising. Acetylcholinesterase inhibitors are commonly used for the reversal of neuromuscular blocking agents, however, undesirable side effects of these reversal agents during anesthesia recovery remains a common problem.

**Objective:** The objective of this study is to observe and compare rates of immediate recovery in surgical patients managed with sugammadex versus neostigmine, postoperative nausea and vomiting, and postoperative pneumonia.

**Methods:** A retrospective chart review of patients who received sugammadex for the reversal of rocuronium or vecuronium, or neostigmine for the reversal of any nondepolarizing neuromuscular blocking agent during the month of June 2017.

**Results:** 56 patients were included in the study. The average length of stay in the post anesthesia care unit in the neostigmine arm was 67.11 minutes versus 55.56 minutes for patients who received sugammadex. Postoperative nausea and vomiting symptoms and treatment was given to 53.57% and 57% to patients in the neostigmine and sugammadex groups respectively. None of the patients developed postoperative pneumonia.

**Conclusion:** According to my results, sugammadex is able to reverse patients faster than neostigmine on average of approximately 12 minutes. Side effects of postoperative nausea and vomiting and postoperative pneumonia rates are comparable between both reversal agents.

**Disclosures:** The authors in this study have nothing to disclose.

[VIEW POSTER]

P1-02: Clinical and economic impact of rapid blood pathogen identification via Verigene
HX Ngo, UI Mbadugha, F Cepeda, GO Udeani
Corpus Christi Medical Center, Corpus Christi, TX

**Background:** Bloodstream infections (BSIs) are associated with an increase in morbidity and mortality if not treated appropriately. Rapid identification of the offending microorganism allows clinicians the opportunity to modify initial broad---spectrum antibiotic therapy.

**Objectives:** The primary objective is to evaluate the impact of Verigene on time to modification of antibiotic therapy by clinicians. The secondary objective is to assess the pharmacoeconomic benefits of Verigene technology on antibiotic therapy.

**Methods:** This is a retrospective chart review study conducted at Corpus Christi Medical Center. Verigene Gram---Positive Blood Culture technology was utilized to rapidly identify microorganisms in patients with gram---positive blood cultures. Antibiotic therapy was modified via de---escalation or escalation. Interim data analysis was conducted from data collected from January 2015 to August 2017.
Results: Preliminary results included the assessment of 30 patients from January 2015 to March 2015. There were 21 out of 30 patients (70%) who met inclusion criteria. Antibiotic therapy in 8 of 21 patients (38%) were escalated, 6 of 21 (29%) were de-escalated. Therapy appeared to be appropriate in 7 of 21 (33%) and thus not modified. The average time to modification of antibiotic therapy per case was 22.3 hours.

Conclusion: Based on preliminary data, on average it takes approximately 22 hours for therapy modification to occur. Using the conventional approach, it would take approximately 24 to 72 hours for pathogen identification. There is a significant time advantage to therapy modification with the Verigene system. Overall pharmacoeconomic analysis of this study is currently being completed.

Disclosures: HX Ngo has nothing to disclose, UJ Mbadugha has nothing to disclose, F Cepeda has nothing to disclose, GO Udeani has nothing to disclose.

P1-03: Evaluation of a fish oil-based lipid emulsion for adult patients in a community hospital
BA Xu, M Tran
Memorial Hermann Memorial City Medical Center, Houston, TX

Background: Intravenous lipid emulsions (ILE) are a dense source of energy and essential fatty acids used for patients receiving parenteral nutrition. Intestinal failure-associated liver disease has been shown to develop in 15% – 40% of adult patients on parenteral nutrition with ILE and a 25% incidence of transaminitis. Our hospital recently transitioned to fish oil-based, SMOFlipid®, due to the potential benefits of less side effects and better cost benefits.

Objectives: The purpose of this study is to evaluate the use of fish oil-based ILE and assess for instances of transaminitis, hyperbilirubinemia, hypertriglycerideremia and any allergic/adverse reactions.

Methods/Procedures: This is a single-center, retrospective chart review of adult patients who received at least one dose of fish oil-based ILE at Memorial Hermann Memorial City Medical Center from September 2017 to December 2017.

Results: 53 patients were evaluated. 28% of patients had elevated transaminases, 30% had hyperbilirubinemia, and 0% developed acute liver injury or triglyceride levels > 400 mg/dL. No patients discontinued fish oil-based ILE due to adverse effects.

Conclusion: Fish oil-based ILE is safe for use in adults and although there were some instances of transaminitis, none of them were significant enough to cause acute liver injury. Patients on fish oil-based ILE did not experience any side effects or allergies that led to discontinuation of therapy. Some limitations were that only 35 patients had post-treatment transaminases/bilirubin documented, and only 13 patients had post-treatment triglyceride levels recorded.

Disclosures: BA Xu and M Tran have nothing to disclose.

P1-04: Evaluation of a pharmacist-driven allergy assessment service on exposure to non-preferred antibiotics in patients with a documented beta-lactam allergy
B Monene, V Ta, W McCoy, A Martin
CHRISTUS Trinity Mother Frances Health System, Tyler, Texas
**Background:** Antibiotic allergy labels are associated with increased, and at times unnecessary, broad spectrum antibiotic use and worse clinical outcomes for patients.

**Objective:** 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 resulted in a trend towards decreased use of non-preferred antibiotics.

**Disclosure:** All authors have nothing to disclose.

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**P1-05: Evaluation of Adherence to Analgesia and Sedation Protocols for Mechanically Ventilated Adults in the Intensive Care Unit**

KM Niemiec, A Garcia, A Oyanontaruk
Baptist Health System, San Antonio, Texas

**Background:** Appropriate management of pain and agitation in mechanically ventilated (MV) patients is associated with improved clinical outcomes.

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

**Method:** 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 was 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.

**Disclosure:** This author has nothing to disclose.
P1-06: Evaluation of the Efficacy of Direct Oral Anticoagulants (DOACs) in Comparison to Warfarin in Morbidly Obese Patients
C Kalani, E Awudi, G Udeani, S Surani
Corpus Christi Medical Center, Corpus Christi, Texas

**Background:** Recent guidelines recommend the use of direct oral anticoagulants (DOACs) such as apixaban, rivaroxaban, or dabigatran as either similar alternatives or preferable agents to warfarin. However, there is a lack of information on the efficacy of the DOACs in morbidly obese patients.

**Objectives:** The primary objective of this poster is to evaluate the incidence of ischemic stroke and other ischemic events including transient ischemic attacks, deep vein thrombi, and pulmonary emboli with the DOACs compared to warfarin in morbidly obese patients. Secondary objectives include comparisons of all-cause mortality and major bleeding events.

**Methods:** A retrospective, single-center cohort study was performed on patients who were 18 years or older with a body weight over 120 kg or a body mass index over 40 kg/m2 and were on apixaban, rivaroxaban, dabigatran, or warfarin therapy.

**Results:** Preliminary results included 78 patients in the DOAC group and 80 in the warfarin group. There were 5 (6.4%) total ischemic stroke and other ischemic events in the DOAC group in comparison to 4 (5%) with warfarin. As well, there are 4 (5%) all-cause mortality and bleeding events in the DOAC group in comparison to 5 (6.25%) in the warfarin group. Chi-squared analyses show no significant differences in either the primary or secondary outcomes.

**Conclusion:** It does not appear that the DOACs are associated with more ischemic stroke or systemic emboli than warfarin. Dabigatran appears to trend towards more ischemic events. Additionally, the DOACs are not associated with higher mortality or bleeding than warfarin.

**Disclosure(s):** Charlene Kalani: Nothing to disclose; Elizabeth Awudi: Nothing to disclose; George Udeani: Nothing to disclose; Salim Surani: Nothing to disclose

P1-07: Medication Use Evaluation of Intravenous Chlorothiazide at a Large, Academic Medical Center
E Barber, S Micahud, RB Taylor
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

**Background:** Intravenous (IV) Chlorothiazide (Diuril®) is a diuretic and antihypertensive agent indicated for the management of hypertension and edema resulting from heart failure. According to the American Heart Association (AHA), loop diuretics are first line agents for treating fluid retention. Loop diuretics may have an inadequate response in patients and therefore, thiazides may be needed to enhance the diuretic effect. Despite evidence that there is little therapeutic difference between IV and oral routes of administration, patients remain on IV chlorothiazide for prolonged periods of time inappropriately.

**Objectives:** To evaluate prescribing practices of IV chlorothiazide CHI St. Luke’s Health Baylor St. Luke’s Medical Center (BSLMC) in order to develop effective management strategies for appropriate use at our institution.
**Methods:** This study is a single-center retrospective chart review of patients who received IV chlorothiazide from May 1, 2017 through December 31, 2017 at BSLMC. A list of patients was obtained from SharePoint Drug Utilization Report Tool and EPIC database.

**Results:** An interim analysis of IV chlorothiazide orders for 20 patients was performed. 30% of patients were initiated and kept on IV chlorothiazide therapy inappropriately. Approximately 19 vials were used for patients who were able to take oral medications resulting in a $1789.6 cost.

**Conclusion:** Findings demonstrate opportunities for improvement in the use of IV chlorothiazide at our institution. Equivalent oral chlorothiazide would cost $75.04, indicating a potential $1714.56 cost savings. Pharmacists should be proactive in ensuring intravenous chlorothiazide conversion to oral chlorothiazide when appropriate.

**Disclosures:** The authors of this presentation have no disclosures concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

**P1-08:** Evaluation of a pharmacist-driven 4Ts heparin-induced thrombocytopenia (HIT) risk assessment protocol  
S O’Rourke, J Burnett, K Costiloe, W McCoy, A Martin  
CHRISTUS Trinity Mother Frances Health System, Tyler, TX

**Background:** 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.

**Objective:** 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 defined by a PF4 or 4Ts score ordered will be included. The control group will include patients with a PF4 ordered (pre-4Ts protocol implementation). The intervention group will include patients with a 4Ts score ordered (post-4Ts protocol implementation). The primary endpoint is median length of stay. Secondary endpoints include 90-day readmission, 30-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).

**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.

**Disclosure:** Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

**P1-09:** The Impact of Chronic Kidney Disease on Sulfonylurea Associated Hypoglycemia  
L Staton, A Martin, W McCoy, J Dib
Background: 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.

Objectives: 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.

Disclosure: The author has nothing to disclose.

P1-10: Spinal surgery patients with chronic pain: a challenge in acute pain management?
D Dodhiya, J Hooper, J Tyler, W McCoy, A Martin
Tyler, Texas

Background: Acute postoperative pain management in chronic opioid users may represent a therapeutic challenge in due to opioid tolerance.

Objectives: The objective of this study is to evaluate postoperative pain management in opioid tolerant patients undergoing surgical spinal procedures as compared to opioid naïve patients.

Method(s) or Procedure(s): A prospective observational study in a cohort of adult patients admitted for elective spinal surgery. Participation consent and medication histories to determine opioid tolerance (as defined by the Food and Drug Administration) will be collected prior to surgery. Inpatient analgesic therapies, pain scores and related symptomology will be collected from the electronic health record.

Result(s): As of 2/19/2019, no opioid tolerant patients had been recruited. Fourteen opioid non-tolerant patients consented to participate in the study, and 10 had completed their hospitalization. Median hospitalization pain score was 6 (4-7). Mean frequency of pain scores ≥ 7 declined from 3.1 ± 0.76 in the PACU to 1.7 ± 1.07, 2.4 ± 0.78, 1.2 ± 0.94, 0.9 ± 0.47, 0.5 ± 0.4 and 0.5 ± 0 on Days 0, 1, 2, 3, 4 and 5 respectively. Mean oral morphine equivalent opioid use was 57.2 mg ± 26.6, 32.3 mg ± 18.8, 55.9 mg ± 33.4, 67.5 mg ± 35.5, 46.25 mg ± 26.8, 33.33 mg ± 28.7 and 60 mg ± 0 in the PACU and on Days 0, 1, 2, 3, 4 and 5 respectively.

Conclusion(s): Results in Progress. Accrual and data analysis will continue until 80 patients are consented or until June 1, 2018, whichever occurs first.

Disclosure(s): D Dodhiya, J Hooper, J Tyler, W. McCoy and A Martin have nothing to disclose.
P1-11: Assessment of Thyroid Function Test Monitoring by Melanoma Medical Oncology
Michael S. Frei
The University of Texas MD Anderson Cancer Center, Houston, TX

**Purpose:** Pembrolizumab 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 obtaining TFTs at baseline and periodically as clinically indicated.

**Objectives:** The objective 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 pembrolizumab 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

**Disclosure:** The authors have no relevant financial disclosures to make regarding the contents of this research.

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P1-12: Improving the Appropriateness of Pre-Operative Antibiotic Prophylaxis in Patients Undergoing Procedures by Interventional Radiology at a Comprehensive Cancer Center
PJ Hoheisel, KE Cain, CA Marten
The University of Texas MD Anderson Cancer Center; Houston, TX

**Background:** 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 ceftriaxone 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.

**Objective:** 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 minutes 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.

P1-13: Impact of Educational Intervention on Enoxaparin Thromboprophylaxis Dosing in Morbidly Obese Patients in a Comprehensive Cancer Center
C Wong, TN Johnson, CA Marten
The University of Texas MD Anderson Cancer Center, Houston, Texas

Background: Obesity is a major risk factor for venous thromboembolism (VTE). For hospitalized patients, anticoagulant prophylaxis with a low-molecular weight heparin (LMWH), such as enoxaparin 40 mg subcutaneous (subcut) daily is a method for prevention. However, studies have shown that this fixed dose is suboptimal in obese patients and enoxaparin 40 mg subcut every 12 hours or 0.5 mg/kg/day are recommended. Our VTE prophylaxis institutional order set cutoff for obese dosing was changed from body mass index (BMI) 50 kg/m2 to 40 kg/m2.

Objective: To describe the change in appropriate enoxaparin thromboprophylaxis dosing in morbidly obese patients pre- and post-educational intervention.

Method(s): A retrospective chart review was performed to include patients with a BMI ≥ 40 kg/m2 who received enoxaparin thromboprophylaxis from March 2016 to January 2018. Appropriate enoxaparin doses were defined as 40 mg subcut every 12 hours or 0.5 mg/kg/day for creatinine clearance (CrCl) < 30 ml/min, and 30 mg or 40 mg subcut daily for CrCl < 30 ml/min. Educational efforts focused on three services with the most patients that fulfilled the inclusion criteria. Verbal and written education on the order set update was provided to healthcare providers.

Result(s): 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. Appropriate doses for the post-intervention groups were gynecology oncology 27 (71.1%), lymphoma/myeloma 5 (26.3%), and urology 5 (29.4%).

Conclusion(s): There was an increase in appropriate enoxaparin thromboprophylaxis doses in all services after educational intervention.

Disclosure(s): The authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.
P1-14: Naloxegol (Movantik®) medication use evaluation at a quaternary academic medical center
M Sun, BJ Adams, RB Taylor
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

**Background:** Naloxegol (Movantik®) is a peripherally acting mu-opioid receptor antagonist indicated to treat opioid-induced constipation (OIC). OIC has traditionally been treated similarly to functional constipation. However, up to half of patients fail to improve symptomatically. Naloxegol is an option for patients with persistent OIC despite lifestyle modifications and laxative use.

**Objectives:** To assess prescribing practices of naloxegol in order to develop effective management strategies for appropriate use at our institution.

**Methods:** This study is a single-center retrospective chart review of patients who received naloxegol from January 1, 2016 through January 31, 2018 at BSLMC. A list of patients was obtained from SharePoint Drug Utilization Report Tool and EPIC database.

**Results:** An analysis of naloxegol orders for 30 patients was performed. All 30 patients had OIC, and 66.7% (n=20/30) were on chronic opioids. The majority of naloxegol (40%) was ordered by Gastroenterology service. For new starts, naloxegol induced a bowel movement in 65.4% (n=17/26) of patients in an average of 0.82 days. The most common criteria for inappropriate use was lack of bowel regimen use prior to naloxegol administration (n=4/30). Three of five automatic order conversions from methylnaltrexone to naloxegol were to an incorrect frequency based on our institution’s conversion table.

**Conclusion:** Preliminary findings demonstrate opportunities for improvement in naloxegol use at our institution. All patients receiving frequent or scheduled doses of opioids should be placed on an appropriate bowel regimen. For automatic conversion from methylnaltrexone to naloxegol per physician order, pharmacists should ensure appropriate conversion of dosage and frequency.

**Disclosures:** The authors of this presentation have no disclosures concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

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P1-15: Analysis of MultiDrug-Resistant Pseudomonas aeruginosa Management at Baptist Health System
K Starling, K 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 ceftolozane-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.

**Disclosure:** The author has nothing to disclose.

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**P1-16: Medication Use Evaluation of Intravenous Levothyroxine at a Large, Academic Medical Center**

S Michaud, A Sirisaengtaksin, RB Taylor
Baylor St. Luke’s Medical Center, Houston, Texas

**Background:** The cost of IV levothyroxine at $97.28/vial led to the initiation of a protocol in May 2016 at Baylor St. Luke’s Medical Center (BSLMC) allowing pharmacists to hold IV levothyroxine orders for euthyroid patients who are NPO < 5 days. Exclusions include hypothyroid patients who are newly initiated on levothyroxine, refusal of withholding home dose, display of hypothyroidism, myxedema coma, cardiogenic shock or low cardiac output, and life gift donor patients.

**Objective:** To evaluate the use of IV levothyroxine, assess compliance with automatic discontinuation protocol, and identify cost savings opportunities.

**Methods:** Retrospective, observational study using electronic health records to identify patients ≥ 18 years admitted to BSLMC from May 2016 through December 2017 who received IV levothyroxine. Patient demographics, levothyroxine indication and dose, criteria for exclusion to protocol, and total cost of IV levothyroxine therapy will be recorded.

**Results:** From 25 patients, preliminary data shows 32% patients were NPO for > 5 days, 4% had symptoms of hypothyroidism, 8% had myxedema coma, and 56% of patients did not meet criteria. 115 vials were used for patients who did not meet criteria, which cost $11,187.20.

**Conclusions:** Equivalent oral levothyroxine would cost $50, indicating potential of $11,130 cost savings. Pharmacists should be re-educated on the IV levothyroxine safe withholding protocol criteria decrease cost of levothyroxine therapy.

**Disclosures:** The authors of this presentation have no disclosures concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

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**P1-17: Medication Use Evaluation of Prothrombin Complex Concentrate (Kcentra®)**

K Lei, E Yin, S Michaud
CHI St. Luke’s Health Baylor St. Luke’s Medical Center
Houston, Texas
Background: Kcentra® is approved by the FDA for “urgent reversal of acquired coagulation factor deficiency induced by vitamin K antagonists” in patients with acute major bleeding or need of urgent surgery or invasive procedure. However, recent literature suggests the use of Kcentra® for other indications. Off-label use of Kcentra® has increased in recent years at Baylor St. Luke’s Medical Center (BSLMC). Because of Kcentra’s® high cost and increased usage, a follow up MUE is warranted to assess changes in prescribing patterns and associated outcomes.

Objective: To assess Kcentra® prescribing patterns at BSLMC. Focus will be on indication, dose, and prescribing service. Outcomes assessed include blood product use, length of stay, INR after administration, and thrombosis incidence.

Methods: A retrospective observational study will be conducted for patients treated with Kcentra® between January 1, 2017 and September 1, 2017 at BSLMC. An interim analysis was performed for Kcentra® administered in January 2017. This included 28 Kcentra® administrations.

Results and conclusions: An interim analysis of 28 Kcentra® administrations were performed. Of the 28 administrations, 2 doses (7.1%) were used for warfarin reversal. Twenty-six doses (92.9%) were used for non-FDA indicated uses including bleeding during surgery, post-op bleeding, uncontrolled bleeding, cirrhosis, coagulopathy, and transplant. The mean doses for FDA approved indications and off-label uses were 1,489 units (34 units/kg, $2,366.10) and 1,238 units (15 units/kg, $1,930.58) respectively. Preliminary analysis suggests an opportunity to develop criteria to limit utilization of Kcentra® and to guide physician prescribing. Data collection is ongoing and will be required to more accurately assess utilization.

Disclosures: K Lei, E Yin, and S Michaud have no disclosures concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

P1-18: Medication Use Evaluation of Pantoprazole at a Large, Academic Medical Center
AJ Burgos, RB Taylor, LC Davis
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: Intravenous pantoprazole is a proton pump inhibitor used for the prevention of peptic ulcer re-bleeding, prevention of nonsteroidal anti-inflammatory drug-induced ulcers, gastroesophageal reflux disease, and upper gastrointestinal bleeds. Although IV pantoprazole is relatively easy to administer and has a rapid onset of action, it is associated with increased risk of hospital acquired pneumonia, Clostridium difficile, and osteoporosis with long-term use. There is limited data evaluating use of PPIs in the ED.

Objectives: To evaluate prescribing practices of IV pantoprazole at CHI St. Luke’s Health Baylor St. Luke’s Medical Center (BSLMC) ED in order to develop effective management strategies for appropriate use at our institution.

Methods: This study is a single-center retrospective chart review of patients who received IV pantoprazole from January 1, 2017 through June 30, 2017 at BSLMC ED. A list of patients was obtained from SharePoint Drug Utilization Report Tool and EPIC database.

Results: An analysis of IV pantoprazole orders for 100 patients was performed. Presumptive upper gastrointestinal bleed was the most common indication for use (71%). The majority of IV pantoprazole (87%) was ordered by the emergency department service. The most common criteria for inappropriate use were the presence of lower gastrointestinal symptoms (i.e. bright red blood in stool). The majority of patients (84%) were able to take oral medications.

Conclusion: Findings demonstrate opportunities for improvement in the use of IV pantoprazole at our institution. A refresher on proper indications for pantoprazole may be beneficial. Pharmacists should also be proactive in ensuring IV pantoprazole conversion to oral pantoprazole when appropriate.
P1-19: Evaluation of Intravenous Acetaminophen Use at an Academic Medical Center
A Jayachandran, JM Thomas, TM Tieman, LE Lee
UTMB Health, Galveston, Texas

Background: Overuse of intravenous (IV) opioids for perioperative pain management may lead to adverse events such as nausea/vomiting, increased sedation, respiratory depression, and delirium. The pain, agitation, and delirium guidelines recommend combined use of non-opioids and opioids to avoid preventable adverse effects. Current literature has conflicting results regarding the effect of reducing opioid use with IV acetaminophen. Also, IV acetaminophen has been used for fever reduction despite lack of evidence for this indication. The purpose of this study is to evaluate the use of IV acetaminophen within an academic medical center.

Objective: To evaluate the use of IV acetaminophen at UTMB Health and assess adherence to current policy regarding usage restrictions. Primary outcome evaluated is the adherence to usage restrictions. Secondary outcomes include appropriateness of IV acetaminophen in terms of indication, route of administration, and opioid use.

Method(s): A retrospective chart review of 220 IV acetaminophen orders verified in EPIC during November 2017 at UTMB Health.

Result(s): A total of 167 patients received 220 orders for IV acetaminophen. Of these orders, 83.6% were for adults and 16.4% for pediatrics. When evaluating adherence to current restrictions, 64.5% of the orders followed current restriction policy at UTMB Health. Of the 220 orders, 27% were not associated with any surgical procedures.

Conclusion: Although results showed moderate adherence to current restrictions, 27% of orders weren’t for perioperative management. Considering the high acquisition cost of IV acetaminophen in comparison to other formulations, this may contribute to increased health care costs at UTMB Health.

Disclosure(s): Authors of this presentation have no disclosures concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

P1-20: Evaluation of naloxone administration in a large multi-hospital system
Illiana Rangel
Memorial Hermann Memorial City Medical Center, Houston, Texas

Background: Opioid analgesics are frequently administered in the hospital setting for the management of pain. Opioid administration is highly correlated with adverse events and should be monitored appropriately. Excess consumption of opioids may cause patients to experience opioid toxicity including a respiratory rate of 12 breaths per minute or less, hypothermia, and oxygenation of less than 90 %. 


Naloxone is an FDA approved opioid antagonist indicated for the emergency treatment of known or suspected opioid toxicity. Naloxone reverses opioid toxicity by acting as a pure opioid antagonist that competes and displaces opioids at receptor sites and reverses toxicity. The standard dose of naloxone for opioid reversal ranges from 0.4 mg to 2 mg every 2 to 3 minutes. The onset of action for intravenous naloxone is 2 minutes. The half-life of naloxone ranges from 30 to 180 minutes and is often shorter than the competing opioid and patients should be monitored closely.

Naloxone may be used to identify potential adverse reactions related to opioid administration in our institution.

**Objective:** The objective of this study is to evaluate the use of naloxone within the Memorial Hermann Hospital System.

**Methods:** This study will be a retrospective chart review conducted on patients who received at least one dose of naloxone within the Memorial Hermann Hospital System between November 1st, 2017 and January 31st, 2018. Patients younger than 18 and who did not receive an opioids inpatient prior to naloxone administration were excluded. Data collected include patient demographics, vital signs, service line, Memorial Hermann campus, dose of naloxone, opioids administered within 24 hrs prior to naloxone, and patient’s pain score after last administered opioid.

**Results:** In progress

**Conclusion:** In progress

**Disclosures:** The authors have nothing to disclose

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**P1-21: Evaluation of as-needed range orders for opioid analgesics in a community hospital.**

Holly S. Ryan, Chi Pham-Peyton
Memorial Hermann Memorial City Medical Center, Houston, Texas

**Background:** Opioids are a cornerstone of acute pain management. Respiratory depression is one of the most serious adverse drug events of opioids, and has been associated with improper prescribing, administration, and inadequate patient monitoring. Current clinical practice recommends the use of as-needed (PRN) range orders to assist in the assessment and management of acute pain. PRN range orders provide the parameters necessary to safely manage acute pain based on patient-reported pain scores. Ensuring appropriate use of PRN range orders helps prevent the potential harmful effects of overaggressive pain management.

**Objective:** To assess for appropriate prescribing, administration, and monitoring of PRN opioid analgesics in relation to patient-reported pain scores.

**Methods:** A retrospective chart review of randomly selected internal-medicine patients who received at least 2 doses of a PRN opioid during November 2017 was performed. Data collected included inpatient unit, appropriate prescribing, administration, and monitoring of PRN opioids, and naloxone use. Criteria for appropriate and inappropriate prescribing, administration, monitoring, and naloxone use were defined.

**Results:** 77 patients were included in the study. Prescribing, administration, and monitoring of PRN-opioid analgesics was not appropriate according to the defined study criteria in 47%, 77%, and 91% of cases respectively. No patients required naloxone for narcotic reversal.

**Conclusion:** Pharmacists are integral to opioid stewardship programs. Further education of our medical staff will be performed addressing the use of PRN-opioids with a follow-up study to evaluate the use of naloxone for opioid reversal across the Memorial Hermann Hospital System.

**Disclosures:** The authors have nothing to disclose.
P1-22: Pharmacist and Physician Reporting of Palbociclib in the FDA Adverse Event Reporting System
C Teng, O Obodozie-Ofoegbu, LT Groff, VG Encarnacion, H Razzack, BL Frei, CR Frei
The University of Texas at Austin College of Pharmacy and University of Texas Health Science Center School of Medicine, San Antonio, Texas

Background: The FDA Adverse Event Reporting System (FAERS) contains adverse event reports from pharmacists, physicians, consumers, lawyers, and other health professionals. No published studies to date have compared pharmacist and physician reporting in the FAERS for palbociclib.

Objective: The objective of this study is to compare the adverse event reporting of palbociclib between pharmacists and physicians.

Methods or Procedures: Data were obtained from the FAERS and were processed and analyzed by Microsoft Access 2016, Microsoft Excel 2016, and JMP Pro 13. Adverse events for palbociclib reported to the FDA from January 1, 2015 to September 30, 2017 were extracted from the dataset. The proportions of adverse events associated with death and hospitalization, as reported by pharmacists and physicians, were compared with chi-square tests. P-values less than 0.05 were considered to be statistically significant.

Results: Overall, there were 10,140 adverse events reported in the FAERS for palbociclib during the study period: 2,655 by pharmacists and 1,880 by physicians. Physicians were significantly more likely to report death as an adverse event associated with palbociclib than were pharmacists (9.9% vs. 4.7%, p < 0.0001). Physicians and pharmacists were equally likely to report hospitalization as an adverse event associated with palbociclib (10.1% vs. 9.8%, p = 0.8).

Conclusions: Physicians were more likely to report death as an adverse event associated with palbociclib than were pharmacists. It is possible that physicians are more likely to encounter patients in urgent and emergent care situations, than are pharmacists. Further research is needed to explain the underlying cause.

Disclosures: The authors of this presentation have nothing to disclose.

P1-23: Evaluating the benefits of implementing mail order pharmacy services at a community health system: A retrospective review
EM Villanueva, S Gautreaux, M Adamaley-Johnson, A Duong
Harris Health System, Houston, TX

Background: 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.

Objective: 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 our Baytown and Gulfgate outpatient pharmacies. Epic Willow was utilized to obtain the email addresses of all 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:** The majority of mail order respondents on the electronic questionnaire were very satisfied. Patient satisfaction scores improved for both pharmacies. A slight decrease was observed in wait times.

**Conclusions:** Based on questionnaire results, patients have been positively impacted by this service. 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.

**Disclosure:** The authors of this presentation have nothing to disclose.

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**P1-24: Reducing Proton Pump Inhibitor Utilization through Modification of Computerized Physician Order Entry Order Sets**
Irene Kwon, Sondra Davis
Medical City Arlington, Arlington, TX

**Background:** Proton pump inhibitors (PPIs) are commonly prescribed to treat patients with gastrointestinal bleeding and dyspepsia. Despite the utility of these drugs, 25 to 70 percent of these PPIs are prescribed without an appropriate indication. Moreover, the United States Food and Drug Administration (FDA) has issued a safety warning regarding the serious side effects that have been correlated with PPI use, such as increased risk of Clostridium difficile-associated diarrhea and fractures. Other side effects that have been linked with PPIs include acute interstitial nephritis, hypomagnesemia, vitamin B12 deficiency, and pneumonia.

**Objective:** The objective of this study is to demonstrate the impact of removing proton pump inhibitors from physician order entry (CPOE) order sets.

**Methods:** A retrospective study was conducted to evaluate the utilization of PPIs in year 2017 for all oral and intravenous PPIs. PPIs were removed from CPOE order sets in August 2017, however providers were able to order them if needed. For statistical analysis, a student t-test was performed to compare administration of PPIs during the pre-intervention (January to July) vs. post-intervention (August to December) phase per days of therapy.

**Results:** Through the removal of PPIs from CPOE order sets, a statistically significant reduction of 39% in oral PPIs and a 44% in intravenous PPIs were achieved.

**Conclusions:** The removal of PPIs from computerized physician order entry order sets significantly reduced the utilization of both oral and intravenous PPIs.

**Disclosures:** The authors of this presentation have nothing to disclose

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**P1-25: Medication use evaluation of insulin infusion at a large academic medical center**
JL Hirase, BJ Adams, RB Taylor
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CHI St. Luke’s Health - Baylor St. Luke’s Medical Center, Houston, TX
**Background:** Insulin is a polypeptide hormone that controls the storage and metabolism of carbohydrates, proteins, and fats. Insulin infusion is indicated in patients presenting with diabetic ketoacidosis (DKA), critical care illness, post-cardiac surgery, and post-organ transplantation among other indications. To standardize therapy, Baylor St. Luke’s Medical Center has an IV Insulin Infusion Order Set and a protocol for transitioning from IV insulin infusion to SQ long acting insulin.

**Objectives:** Evaluate the administration practices, safety/efficacy, and compliance to order sets for insulin infusion

**Methods:** This study is a single-center, retrospective chart review of patients admitted from January 1st, 2014 through December 31st, 2017 who received at least a 24-hour dose duration of insulin infusion.

**Results:** A total of 100 patients were included. In terms of IV Insulin Infusion Order Set adherence, 71 (71%) of patients had an incorrect initial insulin infusion rate and 17 (17%) of patients had an order for concurrent sliding scale insulin. In terms of adherence to the transition off IV insulin infusion protocol, 39 (39%) were not initiated on a long acting SQ insulin. The mean time to reach target blood sugar was 11.4 hours after the start of insulin infusion. Hypoglycemia was rare, occurring in only 3 (3%) of patients.

**Conclusion:** Specifications for the initial insulin infusion rate and transition to SQ long acting insulin were commonly not followed. Despite these protocol variances, the frequency of hypoglycemia was extremely low. This information provides an opportunity for improvement in protocol adherence through education.

**Disclosures:** Authors of this presentation have nothing to disclose.

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**Category: Resident/Fellow/Post-Graduate – PGY2**

**P2-01: 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

**Background:** 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. Patients are often discharged on inpatient medications when therapeutically equivalent medications with lower out of pocket costs are available.

**Objective:** The objective of this study is to evaluate the impact of prescription formulary status availability 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 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).
Conclusions: Real-time prescription benefit availability does not affect prescribing behavior for tiered/preferred meds. However, the tool significantly reduced the amount of non-formulary medications prescribed.

Disclosures: The authors of this presentation have nothing to disclose

P2-02: Cost-analysis of linezolid versus vancomycin therapy
EH Rath, C Cocchio, J Hooper, W McCoy
CHRISTUS Mother Frances Hospital- Tyler, Tyler, Texas

Background: Drug shortages and intravenous fluid shortages are reaching critical mass. Pharmacotherapeutic decisions are being forced, and unusual therapeutic strategies are being implemented. One of these scenarios is the substitution of vancomycin for linezolid for empiric treatment of various infectious disease indications.

Objective(s): The purpose of this study is to compare costs between vancomycin therapy and linezolid therapy at CHRISTUS Mother Frances Hospital- Tyler.

Method(s): Retrospective, observational study of 400 patients receiving linezolid or vancomycin for SSTI, bone/joint infection, pneumonia, meningitis, intraabdominal infection. Patients who received linezolid from 1/1/2018 through 2/15/2018 will be compared to patients who received vancomycin between 1/1/2017 through 2/15/2018. The difference in mean total drug therapy costs will be compared using Student’s t-test.

Result(s): The duration of therapy was significantly shorter for linezolid 2.29 days (0.08-9.12) vs 4.28 days (0.08-27.49) p < 0.001. The acquisition cost of linezolid is greater than that of vancomycin, however when factoring in lab cost, pharmacist, and technician time, the difference favors linezolid by $4432.01.

Conclusion(s): The acquisition cost of linezolid is greater than that of vancomycin, however when factoring in lab cost, pharmacist, and technician time, the difference favors linezolid by $4432.01. Linezolid was associated with a significantly shorter length of therapy. Savings may be re-deployed for pharmacists to perform other clinical duties, cost savings initiatives or decrease overtime hours.

Disclosure(s): none

S-01: Pharmacological Characterization of Nicotinic Acetylcholine Receptors Positive Allosteric Modulators: LY2087101
Texas A&M College of Pharmacy

Background: Alpha4-Beta2 (α4β2) nicotinic acetylcholine receptors (nAChRs) play a physiological role in the regions of the brain responsible for learning and memory. Cognitive deficits and progressive dementia can be linked to reduced cholinergic activity and malfunction of nAChRs.

Objective: Positive allosteric modulators (PAMs) of nicotinic acetylcholine receptors (nAChRs) have potential therapeutic application in neuropathologies involving nAChR. PAMs enhance the potency and efficacy of released agonist – Acetylcholine (ACh). LY2087101 was identified as a PAM of α7 and α4β2 nAChRs in a high-throughput
screen at Eli Lilly and Company. Mutational analyses and computer docking simulation with α7 nAChR predicted that LY2087101 binds to a site within the transmembrane domain.

**Methods:** In this study, we use mutational analyses and two-electrode voltage-clamp recording from Xenopus oocytes to begin pharmacological characterization of LY208101 interaction with α4β2 nAChR.

**Results:** The α4β2 nAChRs exists in two isoforms, (α4)3(β2)2 low sensitivity and (α4)2(β2)3 high sensitivity nAChRs. The latter is believed to constitute the majority of α4β2 nAChR in the cortex. LY2078101 potentiated ACh-induced currents of low ACh sensitivity (α4)3(β2)2 nAChR and high ACh sensitivity (α4)2(β2)3 nAChRs with similar potency although with higher efficacy at (α4)3(β2)2 than (α4)2(β2)3 nAChR.

**Conclusion:** Mutational analyses within the transmembrane domain will define the contribution of intra-subunit vs. inter-subunit binding sites on LY2087101 potentiation of α4β2 nAChR.

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**S-03: Impact of telephone follow-up calls on emergency department return visits at post-discharge and prior to the first clinic visit**
EB La, IB Ngo, RM Chacko, RG Hall, NA Duncan
Texas Tech University Health Sciences Center, School of Pharmacy, Dallas, Texas

**Background:** Pharmacists can enhance the transitions of care (TOC) process. Previous studies are limited in the cancer patient population and do not extend beyond pharmacist interventions at discharge.

**Objective(s):** To evaluate the addition of a pharmacist to an interdisciplinary palliative (PC) team and determine the impact of pharmacist-driven telephone follow-up calls on 30- and 90-day emergency department (ED) visits occurring in the interim post-discharge and prior to the initial outpatient clinic visit.

**Methods:** This was a pilot observational study. Data was collected through the UT Southwestern (UTSW) electronic medical record (EMR) based on the diagnosis of malignant disease and having at least 1 PC consult prior to discharge. Patients that were included had subsequent outpatient follow-up between 06/10/2016- 05/27/2017. Patients that died prior to discharge, were admitted to hospice or transferred to other facilities were excluded. Demographic analysis generated mean values. Medication errors reconciled, adverse events, time to first pharmacy contact, and occurrence of 30- and 90-day ED visits were evaluated.

**Results:** Pharmacist initial call post-discharge ranged from 48-96 hours and 50% of patients did not return to the ED within the first 30-days post discharge.

**Conclusion(s):** TOC follow-up calls reduced ED readmissions. High exclusion rates correlate to the morbidity among the cohort and can be attributed to late PC consults for patients that were ready for comfort care/hospice. As a result, there were limited amount of patients that fit the inclusion criteria for post-discharge pharmacist intervention.

**Disclosures:** Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of the presentation: EL, IN, RC, RH, ND.

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**S-04: Implications of Early Kidney Screenings: Empowering Patients through Education**
D La, B Choi, E Camacho, JF Castro
Background: Hypertension and Diabetes continue to be the main causes of kidney disease. In order to detect kidney disease early, the ADA 2018 guidelines recommends diabetic and hypertensive patients to obtain spot urinary albumin-to-creatinine ratio (UACR) tests annually. Pharmacists can play a major role in assisting patients to be tested.

Objective: This study demonstrates that, within a brief period of time, pharmacists can educate patients on the importance of preventing kidney disease by obtaining annual UACRs, and by making patients aware that uncontrolled diabetes and hypertension leads to kidney damage and dialysis.

Methods: At a family practice clinic, patients with diabetes or hypertension for at least 5 years were chosen for this study. Third year pharmacy students educated patients on complications/causes of renal damage and encouraged patients to get UACR test annually. Students were timed between the moments they entered until they exited the patient room to time education sessions. At the end of each session, patients were provided a one-page education sheet. Patients then completed a post-survey which assessed the value of the education session.

Results: Students took an average of 9.1 minutes to educate patients. The pre-education survey results reveal that 60% of patients were not aware of annual kidney screenings. The post-education survey reveals that 100% of patients are now aware of annual kidney screenings.

Conclusion: The early detection of kidney disease can be improved by patients requesting annual ACRs. Based on preliminary results, within 9.1 minutes, pharmacists can educate patients on kidney disease and encourage them to ask their providers for annual ACRs.

Disclosure: Nothing to disclose

S-05: Do the number of antibiotics modify the effect of proton pump inhibitor treatments on Clostridium difficile infection in ICU patients?
Peia Lee, Hui Yang, Ronald G. Hall II, Steven Pass, Carlos A. Alvarez
Texas Tech University HSC, Dallas, Texas

Background: Many studies have validated that proton pump inhibitor (PPI) and antibiotics are associated with the risk of Clostridium difficile infection (CDI), but there is a lack of study that examine if the number of antibiotics would modify the effect of PPI on CDI in ICU patients.

Objectives: If the number of antibiotics affect PPI on CDI in ICU patients.

Methods: Retrospective cohort study of ICU patients from 2001 to 2008 in the MIMIC II database. Patients >18 years old, admitted to the ICUs were included in the study. Patients exposed to the number of antibiotics and PPI were compared to the control arm of patients who received neither the antibiotic nor PPI. CDI was identified using ICD-9 code. Multiple logistic regression analysis was used to calculate odds ratios (OR) adjusting for comorbidities, antibiotics, feeding tube placement, gastrointestinal surgery, and methotrexate. The a priori level of significance was set at p <0.05 for the primary analysis.

Results: 16,820 ICU patients were included in the study. PPIs were used in 63% of patients who did not receive an antibiotic vs. 91% that received ≥ 3 antibiotics had CDI (p <0.38). CDI prevalence did not increase in patients with PPI with ≥ 3 antibiotics (95% CI = 0.64-3.24, OR 1.44) compared to the control arm (95% CI = 1.77-6.34, OR 3.35).

Conclusion: The number of antibiotics a patient received did not affect PPI on CDI in ICU patients. More studies are needed to determine if cumulative exposure over time is similarly associated.

Disclosure: C. Alvarez receives funding from National Health Institute (NIH).
S-06: Impact and Trends of Medication Use in Medical Missions: Quesimpuco, Bolivia
AA Ramirez, Collado O, Dodd T, Wei W, Watzak B, PharmD, BCPS
Texas A&M Rangel College of Pharmacy, Kingsville, TX

Background: An interprofessional team of Texas A&M medical, nursing, dental and pharmacy students, as well as faculty and staff, traveled to Quesimpuco, Bolivia in 2012 and 2017. Historically, the area has a limited healthcare infrastructure, and the indigenous Quechua population is among the poorest in the Americas, estimating an annual average income of $97/year. Many improvements have been made by Servants in Faith and Technology (SIFAT) with the help of similar medical mission teams from around the country.

Objective: To measure the impact of a health clinic set up in Quesimpuco, Bolivia by an interprofessional team by comparing medications distributed throughout the community in 2012 and 2017.

Results: The Texas A&M team served 363 patients during the 2017 mission trip and 436 patients during the 2012 mission trip. The medical mission team treated a wide range of medical conditions, including general pain, gastrointestinal issues, parasitic infections, dental extractions, and osteomyelitis. There were 475 encounters as some patients went to more than one service such as seeing medicine and dentistry. A study analysis was conducted to evaluate trends in vitamins and medications dispensed to the community. According to a chi squared test at alpha = 0.05, there was a statistically significant difference in the types of major drugs dispensed in 2012 and 2017. Additionally, according to a chi squared test at alpha = 0.05, there were significant differences in the types of major drugs dispensed to adult men, adult women and children. Analgesic and gastrointestinal drugs had the biggest dispensing increase from 2012.

Conclusion: By evaluating these trends, pharmacists can predict which supplies and medications to stock for subsequent trips. Further mission trips to Quesimpuco, Bolivia are needed to continue analyzing trends. Less patients were seen in 2017 compared to 2012, yet the ratio of medications dispensed was significantly higher. The need for healthcare remains high in developing countries.

Disclosure: The author(s) have nothing to disclose.
**Method:** The Student Society of Health-System Pharmacists (SSHP) chapters within Texas dedicated various events in engaging both student members and student pharmacists in leadership and professional skills development. The events hosted were informational, networking workshops, panel Q&A sessions, and collaborative events with other student organizations.

**Results:** Not applicable

**Conclusion:** The leadership and professional development events hosted by various SSHP chapters sparked interest and motivated students to inquire more about the role leadership and professionalism play in the pharmacy profession. These various events also allowed SSHP chapters to be creative in making student led opportunities to happen and encouraged collaboration with other student organizations.

**Disclosure:** Nothing to disclose

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**S-08: Impact of The Supplemental Nutrition Assistance Program on Pharmacy Students’ Diet and Attitude Towards Food Insecurity**

H Razzack, S Augsteen, Y Poon, B Astorga

UT College of Pharmacy, Student Society of Health-System Pharmacists and Student National Pharmaceutical Association

University of Texas College of Pharmacy, Austin, TX

**Background:** Food insecurity is a lack of consistent access to enough food for an active, healthy life. It is a complex problem that impacts every community in the United States. An estimated 42 million, including 13 million children, are food insecure. Pharmacists play a key role in providing healthcare to patients whose disease state management is often linked to proper nutrition.

**Objective:** To simulate a supplemental nutrition assistance program (SNAP) challenge in order to educate pharmacy students on food insecurities and its role in recommending diet plans to patients with limited resources.

**Methods:** Thirty students from the Student Society of Health-System Pharmacists and Student National Pharmaceutical Association at the University of Texas College of Pharmacy participated in the SNAP challenge. A pre-survey was utilized to gather preliminary information about food insecurity, nutrient consumption, and weekly food spending habits. Over three days of the challenge, participants were instructed to spend no more than $4.40 per day on food. Each participant received meal charts to record food and cost information. At the end of the challenge, a post-survey reassessed their nutrient consumption during the challenge and their understanding of food insecurity.

**Conclusion:** After completing the SNAP challenge and exploring effects of food insecurity, students were more aware of the impact it has on following physician-recommended diet plans. Participants’ understanding of food insecurity increased by 68.6%. In terms of diet, student consumption of carbohydrates increased, meat consumption decreased, protein consumption increased, and fruit and vegetable consumption decreased.

**Disclosures:** The authors of this presentation have nothing to disclose.

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**S-09: Student-Led Development of Patient Awareness Tools for Diabetic Foot Care**

LT Nguyen, HM Poquiz, JF Castro

Texas A&M Irma Lerma Rangel College of Pharmacy, Kingsville, TX
**Background:** Many publications have validated the increasing prevalence of diabetes, solidifying it as the most dominant cause of lower-extremity amputation in the U.S. Currently, there is a lack of studies demonstrating direct pharmacist involvement in motivating patients for self-care. As pharmacists broaden their scope of practice, they have the potential to effectively encourage diabetic patients to enhance their foot care and quality of life.

**Objective:** This student-led pilot study aims to bridge an efficient tool between pharmacy students and diabetic patients to further enhance awareness and motivation for patients to proactively obtain foot exams and effectively self-manage their diabetes.

**Methods:** A patient education tool was developed for pharmacy students to engage diabetic patients to learn and take control of complications associated with their metabolic condition. The tool students utilized included an instructional template with educational material to instruct patients about the importance of foot care. A pre-assessment and post-assessment were employed to analyze patient experience and extrapolate how the experience impacted both the patient and student.

**Result:** Further data collection is essential to adequately conclude the impact of this educational tool. Regardless, the generated study methods parallel previous studies to assume a positive impact on student knowledge reinforcement for diabetic patients to obtain foot exams.

**Conclusion:** Implementation of this diabetic educational tool may provide reinforcement to pharmacy students’ didactic curriculum and benefit patients by raising awareness of the importance of foot care. Future studies may be warranted to obtain data and assess the significant positive impact of this tool in both students and patients.

**Disclosures:** LTN, HMP, JFC: Nothing to disclose

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**S-10: Multi-drug resistant Candida auris; comparison of antifungal susceptibility testing (AFST) methods and assessment of synergistic activity of nikkomycin Z (NKZ) with fluconazole (FLU)**

Samantha Sangabi; Dimitrios P. Kontoyiannis, MD, ScD, FACP, FIDSA, FECMM; Nicholas D. Beyda, PharmD, BCPS

**Background:** Candida auris is a highly virulent and globally emerging MDR fungal pathogen. In the clinical microbiology laboratory, commercial AFST methods (YeastOne) are commonly used, yet concordance with the CLSI reference microbroth dilution method for C. auris is not well established. Combination therapy against MDR strains is also not well studied. Here, we assessed concordance of antifungal MICs obtained by YeastOne vs. CLSI methods among C. auris strains and evaluated the synergistic activity of FLU in combination with NKZ against a FLU-R strain.

**Methods:** Ten strains of C. auris were obtained from the CDC and antifungal MICs determined utilizing the commercial AFST method YeastOne. Essential agreement (EA), defined as absence of discrepancy of > 2 dilutions, between MICs obtained by YeastOne and CLSI reference methods (reported by the CDC) was determined. The synergistic activity of NKZ in combination with FLU was assessed against a FLU-R strain using a microdilution checkerboard technique in 96-well microtiter plates. Synergist activity was assessed by calculating the fractional inhibitory concentration index (FICI) using 24-hour OD readings.

**Results:** Overall EA between MICs obtained by YeastOne and CLSI AFST was poor (54.4%), with EA lowest for CAS (20%) and highest for AMB (90%). Checkerboard analysis revealed that NKZ in combination with FLU exhibited synergist activity against the FLU-R strain.

**Conclusion:** Significant differences in antifungal MICs were observed between YeastOne and CLSI reference AFST methods. FLU in combination with NKZ showed synergistic activity and warrants further investigation as possible treatment for MDR C. auris.
S-11: Assessing Benefits and Barriers of Health Management & Medication Perceptions Among Hispanic Men  
C Amuneke-Nze, J Rendon, K Kearns, W Wang, R Dailey  
The University of Texas at Austin College of Pharmacy and The University of Texas at Austin College of Communication (Austin, Texas)

**Background:** This study is to better understand underserved males’ perceptions regarding health management to inform the development of pharmacist counseling tools that target this population. Hispanic males have health disparities in multiple areas.

**Objectives:** The objective of this poster is to describe Hispanic men’s perceptions regarding health and medication management, understand barriers to prevention and treatment adherence, then test communication messages that resonate with underserved males.

**Methods:** Two qualitative Theory of Planned Behavior based focus groups were conducted. Participants were asked a series of questions about barriers to health management, perceptions of healthcare pharmacists, and medication use in their families and communities. Blood pressure, BMI, and body fat percentages were also recorded. A follow up questionnaire testing for health literacy and health beliefs was completed by participants.

**Results:** Preliminary analyses yielded themes consistent with the theory of planned behavior and themes that seem especially important to Hispanic men. Machismo and similar concepts were mentioned as sources of restrictive social norms. Centrality of family and community was mentioned. Various reasons were given for why participants thought Hispanic adults distrusted medication, physicians, or medical advice. The need for Hispanic health professionals (or those with an understanding of cultural values) was stressed as a solution for distrust.

**Conclusions:** Preliminary results imply that well-documented health disparities in Hispanic males do stem from incompatibilities between aspects of healthcare and Hispanic culture. Through testing of health messaging, we hope to develop strategies that can be employed in promotions and practices of pharmacists and other providers.

**Disclosure(s):** Authors C Amuneke-Nze, J Rendon, K Kearns, W Wang, and R Dailey have nothing to disclose.

S-12: Predicting Opioid Dispensing Trends in Texas Following House Bill 2561  
A Wong, KK Vo, SE Grayson  
Texas A&M University Irma Lerma Rangel College of Pharmacy, Kingsville, TX

**Background:** The opioid crisis is a national healthcare emergency with a growing death toll. To confront the problem, states began mandating the use of their prescription monitoring programs (PMP) by dispensers and/or prescribers. Texas House Bill 2561 passed in 2017 and as of Sept. 1, 2019, the PMP must be accessed prior to prescribing or dispensing.

**Objective:** The objective of this poster is to educate pharmacy practitioners, students, and conference attendees about the implications of mandated prescribing-dispensing PMP in Texas and predicted trends in regards to opioid dispensing and opioid-related deaths.

**Methods:** Data showing rates of opioid prescriptions dispensed (per 100 people) and the percent change in opioid overdose deaths in 16 states, one year prior to and one-year post mandate was compiled from the CDC. This information was organized into two datasets: states with prescriber-dispenser mandated PMP access and prescriber-only mandated PMP access.
Results: States with prescriber-dispenser mandates and prescriber-only mandates showed an average decrease of 6.69% and 7.87% in opioids dispensed per 100 people, respectively. Of these states, three had a decrease in opioid overdose deaths over the same timeframe. Analysis shows there was an average increase of 27.75% and 11.63%, respectively.

Conclusion: Based on the compiled data, Texas may see a downward trend in opioid dispensing rates following mandated PMP query in 2019. However, this may not directly correlate to a decrease in opioid-related deaths. Contrasting data supports that Texas may actually see an increase in opioid deaths following this legislation.

Disclosure: AW, KKV, SEG have no information to disclose.

S-13: Hypertension Guideline Concordance in a Primary Care Clinic for the Underserved
Carmela H. Noche
The University at Austin College of Pharmacy/ University of Texas Rio Grande Valley (UTRGV) Cooperative Pharmacy Program

Background: Hypertension affects approximately 1 billion adults worldwide. Treatment of hypertension has shown to reduce risk of cardiovascular disease and stroke. Clinical guideline-based care ensures patients are being treated with quality and effective recommendations.

Objectives: To evaluate the concordance of hypertension guidelines in a primary care clinic.

Method: Charts of 25 patients >18 years of age and with a previous diagnosis of hypertension were reviewed at the UTRGV Primary Care Clinic. Choice of therapy were evaluated using guidelines from the Eighth Joint National Committee, the American Society of Hypertension and the International Society of Hypertension, and the American College of Cardiology/American Heart Association Task Force.

Results: Therapies of 56% patients were in concordance to either JNC8, ASH/ISH, or ACC/AHA. Of the 44% patients on therapies not supported by guidelines, 45% of the patients were not at goal blood pressure. The most common method of non-concordance was not prescribing 1st line therapies. The 2017 ACC/AHA guideline recommendations increased the percentage of patients with stage 1 and stage 2 hypertension by 24%.

Conclusions: The majority of patients were prescribed therapies that are in concordance with guidelines. Non-concordant patients had a 31% higher frequency of being outside the recommended goal blood pressure. Careful monitoring and regularly updating of health care professionals may improve rate of guideline concordance and improve the quality of care. After the 2017 ACC/AHA guideline release, patients may need an intensified therapy to reach a normal blood pressure.

Disclosure: The author of this poster has nothing to disclose.

S-14: National outpatient gastric acid suppressant prescribing in the United States between 2009 and 2015
KM Leer, HC Bustillos, KR Reveles
University of Texas at Austin College of Pharmacy
Pharmacotherapy Education & Research Center, The University of Texas Health Science Center, San Antonio, TX
**Background:** Gastric acid suppressants (GAS), namely proton pump inhibitors (PPI) and histamine-2 receptor antagonists (H2RA), are indicated for gastroesophageal reflux disease (GERD). Once initiated, they are often used chronically without clear therapeutic intent. While generally well-tolerated short-term, long-term use has been associated with infection, bone fractures, and nutrient malabsorption. Despite these associations, it is unknown if GAS prescribing has changed in recent years.

**Objective:** To investigate national trends in GAS use over a 7-year period.

**Method(s):** This was a cross-sectional study using outpatient data from the Centers for Disease Control and Prevention’s National Ambulatory Medical Care Survey (NAMCS). Data weights were used to derive national estimates. GAS use was calculated as the number of prescriptions per total outpatient visits per year. Demographics and regional prescribing were compared between GAS users and non-users.

**Result(s):** These data represent 6.8 billion outpatient visits between 2009 and 2015. The median (IQR) age of GAS users was 62 (50-73) and non-GAS users was 49 (25-65). GAS users were predominantly female (60.4%) and White (85.2%). H2RA use was steady (average of 1.66% of all outpatient prescriptions) from 2009 to 2015. PPI use increased from 6.46% in 2012 to 8.39% in 2015. H2RA and PPI use were comparable among all four geographic regions. Ranitidine was the most commonly used H2RA (62.0%) and omeprazole the most common PPI (52.1%).

**Conclusion(s):** GAS were commonly prescribed in outpatients from 2009 to 2015. PPI use steadily increased after 2012. Further data analysis will assess appropriateness of GAS prescribing among US outpatients.

**Disclosure(s):** No disclosures to state.

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**S-15: Pharmacologic Appetite Stimulation in Critical and Noncritical Inpatient Populations**

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University of North Texas Health Science Center System College of Pharmacy and Medical City of Fort Worth, Fort Worth, Texas

**Background:** Hospitalized patients are subject to acute illness, stress, and dietary restrictions which may impact appetite or weight. Loss of appetite in these patients may lead to increased morbidity or mortality. Appetite stimulants such as dronabinol, megestrol, and mirtazapine have limited information as to whether they are safe or efficacious in the inpatient setting.

**Objectives:** To analyze the efficacy and safety of appetite stimulating medications in an inpatient population.

**Methods:** This was a single-center, retrospective cohort study of hospitalized patients receiving appetite stimulation between January 1, 2014 and April 30, 2017. The primary outcome was the change in meal intake between drug initiation and discontinuation. Secondary outcomes included documented improvement in appetite and change in weight and various laboratory parameters.

**Results:** Mirtazapine was the most commonly used. There was no difference between groups in meal intake, weight, albumin, or improvement in diet. The mean change in meal intake overall from drug initiation to discontinuation was 17.12%. Almost half (48%) of patients experienced improvement. No serious adverse effects were observed.

**Conclusion(s):** Within an inpatient population, appetite stimulating medications modestly improve meal intake. There was no difference in efficacy outcomes of change in meal intake, weight, or documentation of appetite improvement between the groups.
S-16: Operation Naloxone: Multi-Institutional Opioid Overdose Prevention Service Learning for Health Professions Students
Lubna Mazin; Lucas Hill PharmD, BCPS, BCACP; Kirk Evoy, PharmD, BCACP, BC-ADM, CTTS; Kenneth Lawson, PhD

**Background:** In response to the Opioid Overdose Crisis in the United States, the University of Texas at Austin College of Pharmacy partnered with the Steve Hicks School of Social Work and community partners to combat the crisis together.

**Objective:** To prepare health professions students to train community members to respond effectively to opioid overdoses with naloxone and to determine the effect of program participation on overdose-related knowledge, self-efficacy, and attitudes regarding harm reduction.

**Method:** Faculty and student directors from The University of Texas at Austin College of Pharmacy led a series of 90-minute train-the-trainer seminars for health professions students (pharmacy, medicine, nursing, and social work) in Austin, San Antonio, and Houston. These seminars provided foundational knowledge regarding opioid overdose epidemiology, risk factors, symptoms, evidence-based response, naloxone formulations, case scenarios, and anticipated questions from community members. Pre- and post-training assessments evaluating overdose-related knowledge, self-efficacy, and attitudes regarding harm reduction were embedded within the seminar. Participants were invited to volunteer in a series of community outreach events to provide overdose prevention education to community members. A follow-up assessment was administered electronically approximately three months after the initial seminars.

**Result:** 344 health professions students were trained by Operation Naloxone. These subjects demonstrated significantly improved overdose-related knowledge and self-efficacy, as well as more positive attitudes regarding harm reduction, after training. While these scores declined slightly after three months, they continued to be significantly higher than baseline. Participation in community outreach events did not affect results of the follow-up assessment. A service learning program model may be effective in impacting students' knowledge, self-efficacy, and attitudes through initial training.

**Conclusion:** Brief community outreach is likely insufficient to further enhance these outcomes, and extensive community engagement should be emphasized when possible.

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S-17: Evaluation of a Formal Shadowing Event Developed at a Large Academic Medical Center
Catherine Nguyen, Sara Osman, Darlington Francis, Ryan Hughes
Houston Methodist Hospital, Houston, TX

**Background:** The observed increase in demand for health-system pharmacy shadowing experiences by pharmacy students has prompted the development and establishment of a formal shadowing program at Houston Methodist Hospital.
Objective: The objective of this poster is to present the planning and execution of a weeklong local health-system pharmacy shadowing event.

Methods or Procedure(s): Students from five pharmacy schools were invited to participate in the shadowing program. The first 50 students who signed up were selected to participate. Students were randomly assigned to 31 participating clinical specialists that they shadowed for the day. Afterwards, students were given surveys that included 6 rating-scale questions to assess the program and provide feedback on their shadowing experience.

Result(s): A total of 43 students were surveyed. There was a response rate of 35/43. After analyzing the surveys, 91% of the students were highly satisfied with their shadowing experience. 97% were satisfied with the scheduling process, 94% were satisfied with the Shadow Week team and 86% were satisfied with their matched pharmacist. 94% stated likely to recommend Shadow Week and 92% stated they were likely to return.

Conclusion: Through the surveys, the Pharmacy Student Shadow Week proved to be successful at providing students and pharmacists a formal way to conduct a shadowing experience within Houston Methodist Hospital. It also provided an opportunity to expose students to various areas of health-system pharmacy experience while also allowing for potential recruitment benefits. Due to positive results obtained, Houston Methodist Hospital will continue to execute this program annually.

Disclosure: Catherine Nguyen, Sara Osman, Darlington Francis and Ryan Hughes are all pharmacy student interns at the Houston Methodist Hospital and are presenting this poster to illustrate the benefits of hosting a shadow week at a large academic hospital in the Houston Medical Center. Dr. Sunny Bhakta and Dr. Pei Jen Lin are PGY-2 residents at the same institution and are both responsible for overlooking the compilation of the poster. None of the authors have financial conflicts to disclose.

S-18: Project Collaborate: A Student-Led Community Outreach Initiative
GY Green, JR Argamany, SN McDaniel, SK Rush, CR Frei, KR Reveles
The University of Texas at Austin, Austin, TX

Background: Project Collaborate (PC) is a student-led community outreach program at The University of Texas at Austin College of Pharmacy (UTCOP).

Objective: The purpose of this study was to describe the communities served and lessons learned through PC.

Method: PC was designed to enhance student pharmacists' patient interactions and clinical skills, promote interdisciplinary collaboration, and advance the pharmacy profession. First-year students complete a two-hour comprehensive training over the screening process and healthy lifestyle counseling. During outreach events, members of underserved Texas communities are screened by students and those who are overweight/obese, hypertensive, hyperglycemic and/or hypercholesteremic are identified and counseled on diet and lifestyle changes.

Results: 6,209 participants were screened over the study period (2009 – 2015), primarily in Austin (85.04%) and San Antonio (13.24%), Texas. Approximately 2 out of every 5 participants screened was referred to a health care provider for follow-up.

Discussion: Events provide a broad range of health services to patients with and without medical insurance completely free of charge. The health outcome data obtained from the community served can offer great insight into the unmet health care needs and overall health of a population. Students are able to engage in a humbling experience where they are able to recognize that their commitment to the field of pharmacy is having a dynamic impact on the community in which they are serving.

Conclusion: PC is serving a population in need of health care intervention, while also providing students the opportunity to gain confidence in clinical skills and health care communication.
S-19: Risk of acute kidney injury in non ICU patients on combination antibiotic therapy
C Anyiam, N Castro, M Howard, F Chan, M Gaviola
University of North Texas Health Science Center, Fort Worth, TX

Background: Approximately 4% of hospitalized patients will require empiric therapy with combination antibiotics for the treatment of healthcare-acquired infections such as vancomycin plus piperacillin/tazobactam (VPT), cefepime (VC), or meropenem (VM). Combination treatment with VPT has been associated with a greater incidence of acute kidney injury (AKI) but other combinations have not been extensively studied.

Objectives: To evaluate whether there is a difference in the incidence of AKI in patients who receive VPT, VC, or VM, and to characterize these events in hospitalized, non-critically ill patients.

Methods: This is a single-center, retrospective cohort study of adult, hospitalized patients over a two year time period who received empiric combination antibiotic therapy initiated within 24 hours of each other for a duration of at least 72 hours. Electronic medical records were utilized to characterize the patient population, medication use, and events of AKI as defined and staged by the RIFLE criteria.

Results: This preliminary analysis of 266 included patients showed that VPT was the most common antibiotic combination used, followed by VC, and then VM. Patients in the VM group had the highest incidence of AKI prior to antibiotic administration. The incidence of AKI of any severity was similar in all groups, however it occurred quickest in the VM group which also had the highest incidence kidney failure.

Conclusion: Preliminary results show rates of AKI among patients receiving combination antibiotic therapy seem to be similar between groups. Further analyses will further delineate significance of AKI rates between the various antibiotic regimens.

Disclosure: Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation. This work was supported in part by Medical City Fort Worth, an affiliate of HCA. The views expressed in this publication do not represent the official views of HCA or any of its affiliated entities.

S-20: The Microbiome of Diabetic Foot: Implications for Antimicrobial Stewardship
E Martin, J Meckel, J Shurko, SD Dallas, B Duhon, GC Lee
The University of Texas, College of Pharmacy, Austin, TX

Background: Diabetic foot infections (DFIs) constitute the most common reason for both diabetes-related hospitalization and lower extremity amputations. Differentiating microbial populations that promote healing with those associated with infection-related complications might be a novel treatment tool for antimicrobial stewardship teams managing DFIs.

Objectives: The objective of this study was to utilize metagenomics strategies to evaluate how the DFI microbiome impacts the development of DFI-complications and provide proof-of-concept of this approach for managing DFIs.
Methods: Clinical features and microbiomes of thirty tissue specimens were profiled from patients with DFIs at University Hospital, San Antonio TX. Sequencing was conducted using the Illumina MiSeq instrument and MinION (nanopore sequencing). DFI complications were classified as indicated by ulcer deterioration, osteomyelitis, amputation, and DFI-associated death by 3 months after index DFI sample collection. Real-time identification of pathogens and antimicrobial resistance genes were measured.

Results: Approximately 25% of the patients experienced DFI complications. Tissue samples from those who did not develop DFI complications had higher relative abundance of Streptococcus and Propionibacterium. The wound microbiomes were significantly different based on Hispanic ethnicity (p=0.004), HgA1C (p=0.04), and duration of the wound (p=0.04). Metagenomics correctly detected the pathogens found in culture; the time to accurate classification was completed in <1hr.

Conclusion: Our data suggest Hispanic ethnicity, poor glycemic control, and duration of ulcer were associated with wound microbiomes that predict poor outcomes. Metagenomics-based sequencing has the potential to offer a rapid and accurate strategy for detecting pathogens involved in DFIs.

Disclosure(s): Support provided by the Bioanalytics and Single-Cell Core at UTHSCSA, supported by UTHSCSA and CPRIT grant (RP150600) and Texas Society for Health Systems Pharmacists (TSHP) R&E Foundation (GCL).

S-21: Shingrix® The New Recommended Vaccine to Prevent Shingles
R. N., Vasquez, K. J. Mayers, P. H. Patel
Texas A&M Irma Lerma Rangel College of Pharmacy, Kingsville, TX

Background: Shingles affects 1 out of 3 people in the United States. Based on a 2013 study, the total disease burden of shingles in the United States cost $3017.4 (in millions). The overall efficacy of Shingrix® is 97.2% compared to Zostavax® which only reduces the risk of shingles by 51.2%. Shingrix® is now the recommended vaccine to protect healthy adults 50 years and older against shingles.

Objective: To educate healthcare professionals about the key differences between Shingrix® and Zostavax® in prevention of herpes zoster in healthy older adults.

Methods: Compare and contrast existing literature for safety and efficacy of Shingrix® and Zostavax®.

Utilized PubMed for literature search using key words “Shingrix®” and “Zostavax®” along with a custom publication date time frame of 1/01/2003 – 2/01/2018. Consulted Centers for Disease Control (CDC) and Advisory Committee Immunization Practices (ACIP) for 2017/2018 recommendations.

Results: ZOE-50 a randomized, placebo-controlled observer-blind clinical trial (N= 14,759) that studied the efficacy and safety of Shingrix®. Results revealed Shingrix® reduced risk of developing HZ by 97.2% (95% CI:93.7, 99.0). In comparison, ZEST a placebo-controlled double-blind clinical trial (N=22,439) evaluated the safety and efficacy of Zostavax®. Zostavax® reduced the risk of developing HZ by 69.8% (95% CI:54.1, 80.6).

Conclusions: Shingrix® proves to be more efficacious than Zostavax® while adverse reactions experienced after administration of vaccine are similar. Based on CDC 2018 vaccination guidelines, Shingrix® is the preferred vaccine to prevent shingles. Future areas of study should include younger populations and explore safety when co-administered with pneumococcal vaccine.

Disclosures: RNV, KJM, PHP: Nothing to disclose.
S-22: Risk of Acute Kidney Injury in Critically Ill Patients on Combination Empiric Antibiotic Therapy

N Castro, C Anyiam, M Howard, F Chan, M Gaviola
University of North Texas Health Science Center, Fort Worth, TX

**Background:** Health care acquired infections (HAIs) are commonly treated with combination empiric antibiotic therapy such as vancomycin and piperacillin-tazobactam (VPT). Recent studies suggest the use of VPT is associated with an increased risk of acute kidney injury (AKI). The incidence of AKI within an intensive care unit (ICU) population is about 57% and has been associated with higher rates of mortality and increased length of stay. It remains a question whether the same is true of other combinations therapies such as vancomycin + cefepime (VC) and vancomycin + meropenem (VM).

**Objectives:** To compare the incidence of AKI, as defined by the RIFLE criteria, in ICU patients receiving combination empiric antibiotic therapy (VPT vs VC vs VM) and to characterize the AKI events that occur.

**Methods:** This is a single-center, retrospective cohort study of adult ICU patients that received either VPT, VC, or VM within 24 hours of each other for at least 72 hours between January 1st, 2014 and December 31st, 2016.

**Results:** A total of 3,129 patients were reviewed, and 359 patients were included in this preliminary analysis. VPT continued to be the most common empiric combination used. The VC group had the lowest incidence of AKI. The VM group had the highest incidence of AKI and longest length of stay.

**Conclusion:** Within an ICU population, the incidence of AKI was highest within the VM treatment group compared to VPT and VC. There is limited data comparing these three treatment groups which warrants further research.

**Disclosure:** Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

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**VIEW POSTER**

S-23: Benefits of a Health System Pharmacy Student Observership

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University of Houston College of Pharmacy, Houston, Texas

**Background:** In 2010, Houston Methodist Hospital implemented an unpaid pharmacy observership offered to pharmacy learners after their first or second year. The 6-week program is designed to expose pharmacy learners to various areas of hospital pharmacy practice. The pharmacy learners benefit by expanding their professional network connections and the department benefits by forming valuable relationships with talented and motivated individuals.

**Objectives:** Exposing students to different areas of clinical pharmacy broadens their perspectives of how they can specialize their knowledge towards contributing to a variety of specialty areas in the field.

**Procedures:** The application process for a pharmacy observership is described in detail. Additionally, the breakdown of day-to-day shadowing activities, meetings, and projects is discussed. Finally, the benefits and limitations of an observership from the perspective of the pharmacy learner are explored.
Results: Pursuing a health-system pharmacy observership program during the first two years of pharmacy school has many benefits. Students are able to explore different aspects of institutional pharmacy whilst networking with various pharmacists in multiple specialty areas. Participating in clinical quality improvement projects and attending different committee meetings helps students further enhance their understanding of contributions clinical pharmacist are able to make to make to interdisciplinary healthcare teams.

Conclusion: Pharmacy observership programs allow for pharmacy learners to gain early exposure to health systems pharmacy, observe the role of a clinical pharmacist on an interdisciplinary team, and encourages pursuit of postgraduate training in a variety of pharmacy practice settings.

Disclosure(s): Nothing to disclose.

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S-24: Renal Responses Produced by the Central Microinjection of Salvinorin A and B in conscious Rats
Elizabeth Anatrella1, Pooja Bombaywala1, C. Franklin1, Y. Rangel2, Evan Lucas1, Richard Henderson2, Satwinder Kaur1, and H.B. Gottlieb1
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Background: Intracerebroventricular (ICV) injection of kappa opioid agonists produces a marked diuresis and antinatriuresis in rats. The purpose of this study is to examine the diuretic effects of two drugs with affinity for the kappa opioid receptor, Salvinorin A and B dissolved in acetonitrile vehicle. This study is unique because past studies utilized drug dissolving vehicles (e.g., DMSO) that produced significant cardiovascular and renal effects. We are utilizing a new approach to determine the renal effects produced by these kappa opioid receptor agonists.

Objective: The objective is to educate seminar attendees about the possibility of using Salvinorin to produce diuresis without affecting sodium.

Methods: Arterial blood pressure (ABP), heart rate (HR), and urine output were recorded in conscious rats. Catheters were placed in a femoral vein for drug delivery and infusion of isotonic saline (55 μl/min), and in the urinary bladder for urine collection. Urine was sampled during two 10 min control periods and six 10 min period beginning 10 min after injection of drug or vehicle into the lateral ventricle.

Results: Salvinorin A increased urine excretion without changing HR, mean ABP, or urinary sodium excretion. Injections of acetonitrile (9:1 dilution) alone or Salvinorin B produced no physiological effects in the measured parameters.

Conclusion: The ability of Salvinorin A to increase urine outflow without effecting sodium excretion raises the possibility that preferentially targets kappa opioid receptors that facilitate water excretion, but not sodium. Furthermore, Salvinorin B did not appear to be as efficacious as Salvinorin A in producing a diuresis.

Disclosures: All authors of this study have nothing to disclose.

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S-25: Development of a Pharmacy Summer Camp to Improve High School Students’ Perception of Health-Systems Pharmacists
EL Morales, D Dreucean, EP Pitman
University of Houston College of Pharmacy, Houston, TX
**Background:** The University of Houston College of Pharmacy (UHCOP) hosts an annual summer camp geared toward high school juniors and seniors to increase exposure to the pharmacy profession. In 2016, the summer camp curriculum was designed to provide more insight into health-systems pharmacy, an area in which most high schoolers have little to no exposure. The 2017 curriculum also highlighted tasks performed by health-systems pharmacists, such as medication reconciliation.

**Objectives:** The purpose of this project was to examine the effect of various lectures and activities on high school students’ perspective of health-systems pharmacists.

**Methods:** A 12-item pre and post camp questionnaire was developed by students and faculty members from UHCOP, which assessed the difference pharmacy summer camp made on 2016 and 2017 campers’ career interest and knowledge of the pharmacy profession.

**Results:** A total of 42 pre and post surveys showed increases in agreement with the following statements: pharmacists can work with other disciplines, pharmacists are drug information experts, and pharmacists may receive post-graduate education. In post surveys, 89 percent of students showed interest in clinical specialty pharmacy.

**Conclusion:** This study showed that a focused curriculum can broaden high school students’ perceptions of a health-systems pharmacist and increase clinical specialty pharmacy career interest.

**Disclosures:** All authors have nothing to disclose.

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S-26: Cancer as a predictor of poor outcomes in Clostridium difficile infection among a national cohort of United States veterans
Patel S, Delgado A, Kitten AK, Reveles IA, Reveles KR

**Background:** Prior studies demonstrated higher Clostridium difficile infection (CDI) incidence among cancer patients admitted to United States (U.S.) community hospitals.

**Objective:** Evaluate clinical outcomes and antibiotic therapies in U.S. Veterans Health Administration (VHA) CDI patients with cancer.

**Methods:** This was a retrospective cohort study of all adult VHA patients with CDI from 10/1/2002 to 09/30/2014. CDI was identified using ICD-9-CM code 008.45 plus a positive stool test. Cancer was identified using ICD-9-CM codes and stratified between solid and hematologic malignancies. Outcomes included 30-day mortality and hospital length of stay (LOS) >14 days. Logistic regression and propensity score matching were used to compare CDI outcomes for patients with and without cancer and cancer patients receiving metronidazole or vancomycin monotherapy.

**Results:** 30,326 CDI patients were included, of which 8,777 (28.9%) had cancer. CDI patients with cancer had higher 30-day mortality than non-cancer patients (29.0% vs. 17.7%; OR 1.44; 95% CI 1.33-1.55), but no difference in LOS >14 days (51.3% vs. 48.5%; OR 0.99; 95% CI 0.92-1.12). CDI patients with hematologic malignancies had higher 30-day mortality than solid tumor patients (35.1% vs. 28.3%; OR 1.85; 95% CI 1.56-2.19). Vancomycin-treated patients had similar 30-day mortality (29.3% vs. 27.2%; OR 1.12; 95% CI 0.91-1.36), but higher LOS >14 days (45.4% vs. 42.6%; OR 1.70; 95% CI 1.39-2.07) compared to metronidazole. Findings were similar in the propensity score-matched analyses.

**Conclusions:** Among a cohort of U.S. veterans with CDI, cancer patients had higher 30-day mortality. Cancer patients treated with vancomycin or metronidazole monotherapy had similar 30-day mortality.
S-27: Review of Student Pharmacist-led Medication Therapy Management Services
KA Tormey, R Belmontes, TM Patek, ML Kiger
University of Texas at Austin College of Pharmacy

**Background:** Medication Therapy Management (MTM) describes the range of health care services provided by pharmacists including complete medication therapy reviews, immunizations, disease management and more. These services help manage drug therapy and identify, prevent, and resolve medication related events. Know Your Medicine (KYM) is an outreach program at the University of Texas College of Pharmacy and has been conducting MTM reviews since its founding in 2012.

**Objectives:** Our objective is to review and share the impact and methodology of student pharmacist-led medication reviews in the South Central Texas regions.

**Method(s):** A full MTM was conducted, collecting patient’s demographic information, health screening values, medications, and chronic conditions using KYM’s Qualtrics survey form. A pre- and post-survey was administered to patients gauging their qualitative sense of benefit and confidence.

**Results(s):** The average patient took 9.58 medications and had 3.7 chronic disease states, the most common being high blood pressure, high cholesterol, and diabetes. On a 10-point confidence interval, there was a 25% increase in confidence of information provided by student pharmacists and a 30% increase in knowledge of medications, on average. The most common interventions provided administration technique education or referrals to physician.

**Conclusion(s):** Student pharmacists were able to provide MTM services to 106 patients in 2017 - identifying contraindications and adverse reactions, educating and counseling in high risk populations. KYM will continue to abide by its mission and goal of empowering patients to take charge of their own health and preparing pharmacy students for practice.

**Disclosure(s):** KA Tormey and R Belmontes are the Junior and Senior Research Leaders for KYM, respectively. Also within KYM, T Patek is serving as Co-Chair and ML Kiger is the faculty advisor.

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S-28: Operation Naloxone: Interprofessional Overdose Prevention Service Learning
L Groff, K Nguyen, K Tun, T Nguyen, K Evoy, L Hill
The University of Texas at Austin College of Pharmacy, Austin, Texas

**Background:** Opioid overdose is the fastest growing cause of death in the U.S. Operation Naloxone is an overdose prevention program in which students are trained and subsequently lead trainings related to opioid overdose response, including the proper use of the opioid reversal agent naloxone, and to increase access to naloxone within the community.

**Objective:** The goals of this project were to: 1) conduct train-the-trainer sessions open to all University of Texas Health San Antonio (UTHSA) students; 2) provide trainings and naloxone supply for vulnerable populations; and 3) assess the training effectiveness.

**Methods:** UT Austin College of Pharmacy faculty members led two trainings for UTHSA students. Trained students participated in three interprofessional, student-led overdose prevention trainings for drug rehab center residents.
Results: 84 UTHSA students were trained to provide naloxone education. Student-led trainings reached 272 rehab center residents and staff. Results displayed a significant increase (61% vs. 76%, p<0.0001) in mean knowledge, self-efficacy (median 3.5 vs. 5, p<0.0001) and attitude on harm reduction scores (4 vs. 5, p<0.0001). Interprofessional competencies of student participants also significantly increased (median 6 vs. 7, p=0.002).

Conclusion: Through this project, UTHSA students were trained to provide opioid education and subsequently led trainings for vulnerable populations in Bexar County regarding appropriate opioid overdose response, and naloxone was provided to three rehab centers.

Disclosures: The project was funded by the Center for Medical Humanities & Ethics at UT Health San Antonio.

S-29: Improving patient safety and preventing pain medication duplications, a Pharmacist-led intervention program
S.C. Locke, A.D. Le, R.L. Dunn, J.C. Cho
The University of Texas at Tyler Ben and Maytee Fisch College of Pharmacy, Tyler, Texas Student

Background: As pain management has become a priority in the clinical setting, one East Texas hospital identified pain medication duplications as the most common type of therapeutic duplications occurring within the site. A pharmacy-led intervention program was implemented to reduce frequency of these duplications and decrease patient’s risk of adverse drug events.

Objectives: To describe trends in pain medication duplications after implementation of a pharmacy-led intervention program.

Methods: The program was conducted in the form of reports generated every four hours for three weeks which screened active pain medication orders within the hospital to identify duplications. Duplications were defined as: medications for an individual patient that fell under the same pain scale, same route of administration, and same classification (NSAID, opioid, acetaminopen, and gabapentinoid). To determine therapeutic intervention, a retrospective chart review for each patient was conducted.

Results: 172 duplications were identified across 126 reports, with a daily average of 8.19 duplications. The highest proportion of duplications occurred within the opioid classification (93.5%), PO route of administration (62.2%), and moderate pain scale (47.7%). After retrospective chart review, 158 interventions were made by pharmacists independent of the prescribing physician. The most common intervention made was adjusting the indication of one or more of the medications by either increasing or decreasing the pain scale (56.8%).

Conclusion: The findings in this study demonstrate the large area of impact in which pharmacists improved patient safety by eliminating duplicate pain medication orders that would have otherwise been undiscovered.

Disclosures: The authors have nothing to disclose.

S-30: Comparison of a Medication Adherence Simulation in Professional Pharmacy Students Versus Undergraduate Students
Teresa Nguyen, PharmD Candidate, Karen Rascati, PhD, Holli Temple, PharmD
Introduction: Previous research at colleges and schools of pharmacy showed that simulation learning is an effective method to teach pharmacy students about the issues patients face when prescribed complicated medication regimens.

Rationale: The purpose of this analysis was to compare reported medication adherence rates, perceived barriers, and methods used to increase adherence between undergraduate students and pharmacy students based on a medication-taking simulation course activity.

Method: In the Spring semesters of 2014 and 2015, students in both a pharmacy course and an undergraduate seminar course participated in a short simulation involving a complicated medication regimen. Within one week of participating in the simulation activity, the students answered survey questions about the assignment through an online course sharing platform.

Results: Almost all students enrolled in the courses (237/246 pharmacy students and 34/36 undergraduate students) completed the assignment (>96% response rate). A large percentage of each group reported some non-adherence; 95% (225/237) of first-year pharmacy students and 82% (28/34) of undergraduate students. The top two barriers reported were 1) simply forgetting and 2) difficulty following the food and/or alcohol related restrictions associated with some of the simulated medications. The top two methods used to increase adherence were phone/electronic reminders and paper/spreadsheet reminders.

Conclusion: Pharmacy students reported lower adherence to a complicated medication regimen than undergraduate students. The most common reasons for non-adherence and most common methods used to increase adherence were similar between the two cohorts. The use of electronic reminders was common for both groups of students and should be included in discussions about methods to improve adherence rates.

Funding: N/A
Pearson chi-square test or a Fisher’s exact test depending on sample size. Continuous variables will be analyzed via a mann-whitney U-test or a two-sample t-test.

**Result(s):** Research in progress

**Conclusion(s):** Research in Progress

**Disclosure(s):** LM Roccograndi is the Student Section Chair for the Texas Society of Health-System Pharmacy. The remaining author(s) declare no conflicts of interest with respect to research, authorship, and/or publication of this article.

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**S-32: Willingness of Retail Pharmacists to Expand Cognitive Practice**

*Methodology to Mitigate Bias in a Community Pharmacist Sample*

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University of the Incarnate Word, Feik School of Pharmacy

**Introduction:** This project will provide insight into the opinions of practicing community pharmacists in Bexar County (San Antonio, TX area) on several areas of expanding practice while mitigating some elements of sampling/convenience bias. The advantages and disadvantages of this methodology as well as the results may provide a platform for further research with a broader scope.

**Objectives:**

- Assess quantity of community locations that are offering additional services
- Assess respondent’s willingness (if able) to perform additional services in the community setting
- Assess perceived barriers to entry into community collaborative practice agreements
- Assess relationships between demographic factors, willingness, and perceived barriers.
- Post survey: facilitate informational campaign targeting specific perceived barriers (ex; poster at Bexar County Pharmacist Association)

**Methodology:** A paper-survey and a web survey (SurveyMonkey) was developed with identical questions and informed consent statements. Data collection and analysis will be performed at existing available FSOP facilities. Subjects include registered pharmacists within the Bexar County area working in a community setting. A search of independent, community chain, mass merchandisers, and grocery store chain pharmacies within Bexar County was done using Google Maps, HEB’s official website, CVS’s official website, Walgreen’s official website, Walmart’s official website, NCPA, and Whitepages search engine.

**Results/Outcomes:** Better understanding by pharmacy leadership of the willingness and barriers perceived by community pharmacists may enable leadership to mitigate these concerns and allow the profession a stronger chance of successfully enacting additional professional duties.

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**Category: Technician**

**T-01: Unit Based Technician Model in an ICU Setting**

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Memorial Hermann Memorial City Medical Center  
Houston, Texas
**Background:** With expanding roles of pharmacists in patient care, the pharmacy distributive roles need to be expanded. Tech Check Tech and unit-based technician models have allowed for the expansion of our technician roles. Technician engagement within the nursing team and the collaboration can increase job satisfaction. Daily activities such as Pyxis refill, ICU drips rounds, identification of medication for IV to PO are key to allow for this role advancement.

**Objectives:** The objective of this initiative is to evaluate the effectiveness of a unit-based technician model in an ICU setting. The goal is to decrease medication requests, increase nursing satisfaction, decrease stock outs, decrease medication turnaround time, improve technician engagement, and career advancement.

**Methods:** In implementing an efficient process to increase medication availability to the ICU nursing units we monitored the stock outs, medication requests as well as the turnaround time especially targeting critical drugs. A nursing satisfaction survey before and after the unit-based technician implementation was conducted to evaluate the progress of the model.

**Results:** Nursing satisfaction improved and there was a decrease in stock outs and medication delivery turnaround time.

**Conclusion:** Within one year of implementation of the ICU technician model, we have seen more integration and advancement of our pharmacy technicians. An increase in nursing satisfaction scores, decrease in Pyxis stockout turnaround times and the decrease in stock out numbers have proven and validated the concept of the unit-based technician model.

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

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**T-02: Waste and Cost Reductions of Controlled Substances with Use of ADC Management Tools**

J Arzu, SE Lake-Wallace
TIRR Memorial Hermann, Houston, TX

**Background:** Effective use of Automated Dispensing Cabinet (ADC) management tools is essential to manage drug shortages, achieve budget goals while maintain access to medications. TIRR Memorial Hermann is a 134 bed inpatient rehabilitation facility and outpatient clinic staffed by 5 full-time technicians, which stocks over 95% of its medications in 12 Pyxis® devices. Prior to this project, the unloading practices included the removal of all medications not used within 90 days.

**Objective:** Standardize the practice of reviewing all controlled substances available within all ADC’s not used within 40 days. The goal is to reduce inventory, rotate stock and minimize wastage and inventory discrepancies.

**Methods:** This observational study was conducted from June 2017 to January 2018. Educational Resource Specialist utilized Pyxis® reports to identify and review all controlled substances (CS) not in use within 40 days on a monthly basis.

**Results:** Reduced CS inventory loaded in all ADC’s by 19% (768 doses). Monthly load throughout the month remained stable with a slight reduction. Expired/wasted doses of controlled substances reduced by 21% compared to previous year. Nursing inventory activity remained stable.

**Conclusions:** The implementation of this new process on a monthly basis reduced the amount of unused controlled substances outdating in ADC’s, reduced wastage, and reduced the CS discrepancies during weekly inventories. Process did not increase workload for loading drugs. Anticipated reduction in nursing workload not
realized but may have been impacted by other factors. Process supported pharmacy goals to effectively utilized inventory, staff time, and reduce risk of diversion.

Disclosure: JE Arzu: Nothing to disclose, SE Lake-Wallace- TSHP Poster Review Committee Member

T-03: Medication Compliance in Patients Admitted through a Community Hospital Emergency Room
RA Ijax, EM Veltz, RA Forbess
Houston Methodist Willowbrook, Houston, Texas

Background: Medication compliance is important both in determining good treatment outcomes and influencing healthcare costs. Studies have been conducted that have shown that non-compliance leads to adverse events, hospitalization and increased healthcare costs. They have also shown that compliance can improve treatment outcomes.

Objectives: The objective of this project was to assess non-compliance in patients presenting to the emergency department of a community hospital over a 3-month period.

Method: In the process of completing medication histories to facilitate physician admission reconciliation, the pharmacy technicians involved in this project completed a separate form documenting whether the patient was taking their medications as directed. If the patient was non-compliant with their medications, the medication reported was documented along with the reason cited for non-compliance. Emergency room visit and/or hospitalization within the previous 30 days was also assessed and documented for each patient.

Results: A total of 905 patients were evaluated over the 3-month period, 743 of which were new admissions and 162 readmissions. Approximately 90-percent of the new admissions and 85-precent of readmissions were found to be compliant with their prescribed medication therapy. The most frequent medications that patients reported not taking as prescribed were cardiac, psychiatric/neurological and antidiabetic medications.

Conclusions: The number of patients who were non-compliant with their medications was found to be approximately ten-percent, which was lower than expected based on the literature. There was a higher percentage of readmitted patients that were found to be non-compliant.

Disclosures: RA Ijax has nothing to disclose. EM Veltz has nothing to disclose. RA Forbess has nothing to disclose.

Category: Display Only

D-01: Understanding Patient Engagement and Health Information Preferences
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Council on Professional Affairs of the Texas Society of Health-System Pharmacists, Austin, TX

Background: Patient engagement refers to a multitude of strategies to engage patients in their own care. By involving patients in their care, they feel more empowered to take ownership of their health; thus, leading to improved outcomes, reduced cost, and overall patient satisfaction. However, there has been limited involvement of the patient’s voice in the development of these tools and interventions.
Objectives: Assess patient desire for health-related information and preferred method of health-related communication. Initiate discussion and debate of effective patient engagement strategies.

Methods: Patients across inpatient and outpatient settings were administered a short survey with multiple choice and open-ended questions. Questions assessed current level of engagement in personal health, preferred method for receiving healthcare information, and patient definition of engagement. No demographic information or personal identifiers were collected.

Results: There were 82 total respondents whom completed the survey. Majority of patients found it important to control their health issues and 60% reported researching their medications. Most respondents (>50%) preferred receiving health-related information and education via face-to-face interaction with their healthcare provider in lieu of less direct methods. The overarching theme of responses defined patient engagement as open communication between healthcare provider and patient and respect for patient autonomy.

Discussion: Responses indicate patients prefer to be engaged directly with their healthcare provider rather than nondirect means; thus, pharmacists require resources and education on effective communication strategies to increase patient collaboration. Further efforts should be undertaken to engage patients in the development and design of education interventions and tools.

Disclosures: Lydia Girgis has no conflicts of interest. Les Covington is Vice Chair of the Professional Affairs Council. Ken Maxik has no conflicts of interest. Sarah Lake-Wallace is Chair of the Professional Affairs Council, member of the TSHP R&E poster review committee

D-02: A Medication Utilization review on two Anti- TNF alpha Agents in a county hospital health system
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Harris Health System and Texas Southern University, Houston, Texas

Problem Description: The Harris health County system is one of the biggest county hospital system in the United States of America. TNF alpha inhibitors "Enbrel (etanercept)" and "Humira (adalimumab)" were constantly among the top 20 expenditures of the County hospital system due to frequent usage of these drugs to treat numerous indications that are not FDA approved. As a result of this, the reimbursement for these drugs were not very great for the system and this led to an increase in the total hospital expenditure during the year 2016.

Goal: The purpose of this study is to evaluate the use of Anti TNF alpha medication “adalimumab” and “etanercept”, identify compliance with the pre-authorization guidelines in Harris Health System, and also reduce the total cost spent by the county system on these medications.

Program Description: The P&T committee decided to put certain restrictions on adalimumab and etanercept and put the Formulary Command Center to enforce those restrictions. There was an Outpatient utilization report for etanercept and adalimumab from Epic Willow for time frame: 01/01/2016 through 06/15/2017. There were 550 patients total that received either adalimumab or etanercept during this time period. Random Randomizer was used to select 115 patients sample. Report characteristics includes: Patients’ demographics (age/gender), indication for use, location, adverse drug reactions, prescribing specialty, agent failed previously, FCC documented approval, TB skin test status.

Observations: The average age of the patient on either etanercept or enbrel was 47 years old, 71% of the patient were female, while 21% of the patients were male. Rheumatology specialty had the highest number of medication order for both adalimumab and enbrel, Psoriasis was the number one indication for adalimumab, while
Rheumatoid arthritis was the number one indication of etanercept. 100% of the documented indications in the study were either FDA approved indication or an off-label indication.

**Findings/Recommendations:** The use of the restriction method proved to be an effective strategy in reducing the cost of the two TNF- alpha inhibitors etanercept and adalimumab and ensure the proper usage of both medications. The author therefore recommend that the P & T committee continue to restrict the use of etanercept and adalimumab to Dermatology and Rheumatology specialties and monitor the use and cost and consider Restricting the use of adalimumab to Gastroenterology as well.

**Sponsorship:** Texas Southern University, Harris Health System

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**D-03: Cardiovascular Impact of Chronic Opioid use in Pain Management**

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²Vernachio Managed Care Consulting, LLC

**Background:** In 2016, 214.8 million opioid prescriptions were dispensed. The potential for adverse events is high (range 1-40%), specifically there may be increased risk for cardiovascular events.

**Objective:** To critically evaluate the association between chronic use of opioids for pain management and any cardiovascular diseases with respect to mechanism of action, patient characteristics, and disease characteristics.

**Methods:** A systematic review from 2007 – 2017 using search engines PubMed, Scopus, and IPA and search terms including: “opioid,” “chronic pain management,” “cardiovascular effect,” “coronary heart disease,” and “atrial fibrillation,” yielded 238 articles. After applying the inclusion criteria of the last seven years, human study, clinical study, and clinical trial, 60 articles were selected. Twelve articles were relevant based on the scope of study.

**Results:** Studies demonstrate morphine is associated with histamine release and consequent vasodilation and hypotension. Methadone blocks the human ether-a-go-go related gene channel causing QT prolongation. Higher rates of QT prolongation are noted in patients taking > 40 mg of methadone. QT prolongation is significantly greater in patients receiving methadone and CYP3A4 inhibitors (p<.05). Studies show increased risk of acute coronary heart disease. In arthritis, when compared to NSAID users, opioid users demonstrate a two-fold higher risk of myocardial infarction and a five-fold higher risk of coronary artery revascularizations. Chronic opioid use in men may lower testosterone resulting in suppression of activation of pro inflammatory cytokine which may initiate coronary atheroma.

**Conclusion:** Although, the literature supports an association between chronic opioid use and cardiovascular diseases, further research is warranted due to lack of randomized controlled trials.

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**D-04: Neuroprotective Qualities of σ-1 on Retinal Ganglion Cells**

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Background/Objective: Glaucoma is a disease that leads to reduced quality of life. Damage to the optic nerve (ON) and retinal ganglion cells (RGCs) negatively impacts vision. The purpose of the experiment is to see if sigma-1 receptors (σ-1R) in RGCs can be used to develop treatments to alleviate RGC degeneration related to glaucoma.

Methods: Genotyped mice were classified as heterozygotes, knock-out (KO) (no σ-1R), or wild-type (WT) (σ-1R is present). An optic nerve crush (ONC) is performed to initiate RGC death. We then inject a σ-1 vector into one eye of the mice with the KO gene. An empty vector and WT mice are used as controls. Retinas are separated into cross-sections then assigned a label (ex: 2w ONC, indicating images taken 2 weeks after ONC). The observer looks for trends in RGC counts with a goal of finding whether re-introducing σ-1 to a KO mouse keeps RGCs viable after ONC.

Results: It is observed that the KO mice injected with the σ-1 vector had RGC counts resembling those of WT mice. This indicates that σ-1 may be used as a neuroprotective measure to treat glaucoma affecting the ON.

Conclusion: Knowing the targets of glaucoma is helpful in allowing experimenters to find ways to reverse and prevent its effects. Using the σ-1 receptor, we could manipulate the retina to show that the receptor has neuroprotective properties. Once a treatment is created with this information, drug trials may be initiated, and we may be able to improve quality of life in people suffering from glaucoma.

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