Practitioner – Administrative Management Category

**Analysis of Pharmacy Waste and Productivity Utilizing Lean and Six Sigma Philosophies**

*P Oommen, Pharm.D*

Children’s Health Medical Center Dallas

**Background:** Data-driven projections are helpful tools to accurately measure cart fill/batch times. The pharmacy department has rising concern of quality of workload with current staffing grid. Value stress map helps expose waste, see broken processes, and evaluate cost. Kaizen, which loosely translated from Japanese meaning of “continual improvement”, is a philosophy that affects the way everyone looks at a work environment. Adopting Kaizen philosophy will promote learning and improve processes to create a culture that drives everyone to constantly seek opportunities for improvement. Children’s Medical Center (CMC) began analysis of data starting October 2014

**Objective:** To increase efficiency with data-driven projections for new batch times and order ranges. Also to increase efficiency of workload with current staffing grid and expose waste and broken processes via value stream map for pharmacy operation areas. Lastly, to create a culture change while utilizing Kaizen for improvement

**Method:** Using Kaizen philosophy to accurately identify key variables and constraints, including number of cart fills and order range, staffing grid/24 hour staffing schedule, cart fill monthly data review, average orders per day, value stream delivery times, and intravenous (IV) versus oral (PO) medication volumes

**Result:** CMC ended 6-month data analysis at the end of April 2015. Proposed changes, which went into effect in July 2015, included decreasing the number of Cart fills to 6, tweaked order ranges based on typical order volumes in a 24-hour period, scheduled Cart fill times to run at optimal times based on data review, and the evening-overnight Cart fills reduced from 3 to 2

**Conclusion:** Lean and six sigma data analysis improved efficiency with Cart fill times. Value stream mapping helped improved batch delivery times to nursing units. Average orders per day helped improved Cart fill range parameters

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

**Outpatient Community Pharmacy Medical Home for a Metropolitan Health System**

*TPalmer, LCohen, DDerasarri, KFairman, SHaj, DPoe, and JWeinland*

University of North Texas System College of Pharmacy

**Background:** Evidence supports positive outcomes on patient health if they adhere to their medications (Zelmer, 2014). Our hypothesis is if outpatient community pharmacies partnered with a metropolitan healthcare system to manage their patient’s medication adherence, the results would be a reduction in emergency room visits, admissions, re-admissions, and length of stay. We believe as a result of outpatient community pharmacies working with the metropolitan healthcare system through the system’s health IT communication tools, providing their patients with medication counseling at discharge, sustained follow-up, and facilitation of clinical partnerships, would benefit the health system by reducing hospital readmissions.

**Objectives:** The feasibility of outpatient community pharmacies partnering with a metropolitan healthcare system to manage their patient’s medication adherence.

**Methods:** The qualitative method was chosen for this study because of the methods ability for gaining insight into or understanding of opinions, attitudes, and experiences (Rowley, 2012). This study sampled directors of pharmacy from a metropolitan healthcare system (n=10). Cumulative these directors possess intensive experiences with the challenges of reducing emergency room visits, hospital admissions and/or readmissions and reduction of hospital length of stay. Seven directors consented to be interviewed by the students and a faculty member utilizing a semi structured open ended 10 question survey instrument.
Results: Data analysis consisted of the reduction of information to significant statements or quotes and the combination into significant themes. Five significant themes emerged from the interview transcripts data and aligned with the 10 interview questions: 1. Patient, satisfaction, information, and needs. 2. Financial benefit and partnership. 3. Existing models. 4. Portable, and transparent information. 5. Redefining the continuum of care.

Conclusions: Data from the participant’s interview transcripts, resultant analysis, and theme recognition identified reasons for outpatient community pharmacies to partner with health care systems to manage patient’s medication adherence. The results of the study will contribute to the body of knowledge about outpatient community pharmacies partnering with health care systems to manage patient’s medication adherence. The students accelerated their professional interviewing techniques by participating in the interviewing of the study participants. The experiences from the study enhanced their desires to pursue the research and design of a feasible and sustainable pharmacy medical home model as an integral component of the continuum of care. Future research will be student driven.

Disclosure: TPalmer is an adjunct associate professor in the Department of Pharmacotherapy in the University of North Texas System College of Pharmacy. LCohen is a tenured professor in the Department of Pharmacotherapy in the University of North Texas System College of Pharmacy. DDerasari, KFairman, SHaj, DPoe, and JWeinland are first professional year students at the University of North Texas System College of Pharmacy.

Implementation of a non-formulary process in the electronic medical record at a county teaching facility
AP Rahman, AM Tran, KS Alvarez, EE Moss, JN McNulty, JM Iskander, RL Appleberry-Recker, TM Jones, JA Tran
Parkland Health and Hospital System, Dallas, Texas

Background –In 2009, Parkland implemented EPIC, an electronic medical record, for the inpatient and ambulatory services. Prior to October 2015, non-formulary medications were managed through a paper process. The process was challenging and led to miscommunication, incomplete form submission, and misplaced forms ultimately delaying patient care.

Objective(s) – Design an electronic process by which to request, evaluate and procure non-formulary medications.

Methods/Procedure - EPIC Willow informatics team assisted pharmacy in developing a non-formulary ERX (electronic prescription) which includes drug name, dose, length of therapy, previous therapies, type of request (new/continuation of home medication), and approving attending provider. The ERX is routed to EPIC in-basket folder “Non-formulary”, initiating the electronic process. All pharmacists, medication access specialist technicians, and procurement team have access to the folder. If the non-formulary is approved by the clinical pharmacy specialist, it is simultaneously sent via in-basket to inpatient centralized pharmacist and Medication Access Specialists to review quantity on hand and patient assistance programs available. Next, the non-formulary is sent to procurement to assess need for ordering for inpatient and ambulatory locations. Finally, the request is sent back to the clinical pharmacy specialist to complete the process by writing an approval note in EPIC.

Result(s) – The inpatient non-formulary process went live October 2015, and 737 requests have been reviewed. Currently, all requests have been complete, none have been misplaced and communication has vastly improved.

Conclusion(s) – Implementation of the electronic non-formulary process has been successful. Future direction is to implement a similar process for ambulatory services.

Disclosure(s) – All authors have nothing to disclose

REPLACEMENT: Utilizing Clinical Decision Support to Improve Medication Management in the Elderly
Patti J Romeril, Gulnar Banglawala, Anwar M Sirajuddin, Jennifer Westmorland
Memorial Herrmann, Houston, Texas

Background: The Beers criteria are the most commonly used criteria to assist clinicians in preventing adverse drug events (ADE) in older adults. Clinical Decision Support (CDS) alerts allow for informed decisions at the point of order entry.

Objectives: To develop CDS alerts based upon the Beers Criteria to address medication management in the elderly. To
improve the alert acceptance rate by adding alternative options at the time of alert.

Methods: The 2012 Beers Criteria was reviewed to develop a list of medications with the highest potential to result in significant adverse events in the elderly population. Low risk alternative agents were paired with the streamlined list of medications. A CDS alert was then developed to inform the prescriber of potential ADE and recommend a lower risk alternative agent. The prescriber was provided with an order sentence for the suggested alternative and was given the option to consult pharmacy. Acceptance of the alert was defined as the ratio of alert cancellations, without reinitiating the original order, to total alerts.

Results: This analysis included 13,458 alerts which impacted 7,877 unique patients. The acceptance rate was 28%, higher than the previous average acceptance rate of 12%.

Conclusion(s): Beers can be used to develop CDS alerts to improve medication management in the elderly. Addition of a recommended alternative with the appropriate order sentence increased the average acceptance rate. We plan to review the unaccepted alerts in order to further increase the acceptance rate

Disclosure(s): None

Innovative On-site/Telepharmacy Hybrid Program to Reduce Operating Cost and Improve Pharmaceutical Patient Care
Lulena Schindler, Melinda Foster
Texas Health Heart & Vascular Hospital, Arlington, Texas

Background: Reducing cost while maintaining a high level of pharmaceutical patient care is a goal of many hospital pharmacies. Our hospital implemented a unique on-site/telepharmacy hybrid program. Small hospitals often utilize either on-site pharmacist(s) or off-site telepharmacy services. Literature review and interviews with pharmacy service companies revealed no evidence of a hospital fully utilizing both approaches together.

Objective: Examine outcomes from implementing an innovative on-site/telepharmacy program over one year.

Methods: Pre-intervention/post-intervention comparison using descriptive statistics to measure pharmacy labor cost, pharmaceutical interventions, and pharmacy productivity data.

Results: Pharmacy labor cost was reduced by $11,036 for a savings of 12% per year ($p = 0.037). Pharmaceutical interventions increased from 164 to 845 interventions for an astounding 515% ($p <0.001) increase. The amount of orders verified by the pharmacist-in-charge also decreased allowing for better hands-on clinical coverage.

Conclusion: Establishment of this hybrid approach to pharmacy services not only decreased labor cost, but led to an increase in clinical interventions. The improved order coverage then afforded the opportunity for the pharmacist-in-charge to perform other services such as bedside rounding, medication counseling, formulary management, and daily safety huddles.

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

Evaluation of Clinical Pharmacist Impact In an Urban ED
SL Stevens, KN Kohman, DS Henderson, JP D’Etienne
Department of Pharmacy, Baylor University Medical Center, Dallas, TX

BACKGROUND – The emergency department (ED) is vulnerable to medication errors due to its high patient volume with frequent distractions and utilization of high risk medications. Additionally, there is a high prevalence of verbal orders, limited patient history, and availability of established safety mechanisms are typically limited. Emergency medicine pharmacists (EPh) have been shown to decrease adverse drug events and thus play a viable role in the ED.

OBJECTIVES – To evaluate the impact of EPh within the ED by assessing the type and quantity of interventions documented and to determine the estimated cost avoidance.
METHODS – During a 6-month period, interventions documented by two EPh were analyzed mirroring an analysis performed by Detroit Receiving Hospital, which evaluated the cost savings of 24-hour EPh coverage. Average cost avoidance were calculated and adjusted for yearly inflation. An average probability of harm without EPh intervention was assigned based on professional determination.

RESULTS – There were 2,550 interventions documented. Total estimated cost avoidance for a 6-month period was $2,087,724. Additional benefits not included in the cost savings analysis were outpatient pharmacy callbacks and drug procurement, which revealed a total of 106.25 hours and 45 hours of time saved for nurses and technicians, respectively. A return on investment analysis projected an annual cost savings of $3,856,450 with two additional full time equivalents positions for the expansion of ED clinical pharmacy services.

CONCLUSIONS – This analysis demonstrates the impact of EPh within the ED through improved patient safety and significant estimated cost avoidance associated with interventions.

Disclosures: Authors have nothing to disclose

Practitioner – Clinical Category

Creating a Synergist Model: Innovative Pharmacy Practice in a Long-Term Care and Skilled Nursing Facility
CT Alessi, LM Cuellar
TIRR Memorial Hermann, Houston, TX

BACKGROUND – TIRR Memorial Hermann (TIRR) is an inpatient rehabilitation facility experienced in managing medically complex patients while increasing overall independence and health. University Place (UP) Senior Living Community offers four levels of care: independent living, personal assistance services, long-term care (LTAC), & skilled nursing (SNF). Residents in LTAC & SNF are medically fragile, often on complex medication regimens. Increasing pharmacist involvement at UP through partnership with TIRR Pharmacy presented a great opportunity for collaborative care.

PURPOSE: To initiate a new model of care by increasing pharmacist’s role within a LTAC/SNF. To ensure improved patient outcomes by increased medication management oversight. To optimize the synergy between TIRR & UP to provide comprehensive, patient-centered transitional care.

METHODS: Critical aspects of practice model include having a Clinical Specialist on site 2 days/week providing: medication reconciliation within 72 hours of admission, consistent drug regimen reviews, leading an interdisciplinary medication management team, using a clinical surveillance tool, creating a dashboard for intervention tracking, & initiation of antibiotic stewardship program.

RESULTS: In the first seven months, 556 pharmacist interventions were documented, 50 immunizations were administered to independent & assisted living residents, and an estimated $32K medication cost savings was realized. Medication reviews increased by 15 patients/month. Drug wastage decreased by 50% per month. Eight pharmacist-managed protocols were approved & initiated. Education activities included nursing medication in-services.

CONCLUSIONS: Increased pharmacist leadership in medication management, staff reporting satisfaction & patients are receiving improved coordination of care.

Disclosures: None

Utilization of a Risk Assessment Tool to Identify Patients at High Risk of Developing a Clostridium difficile Infection
M Anderson, C Morrison, M Carrillo, H Syed, M Khan
Memorial Hermann Southeast Hospital, Houston, Texas

Background: Clostridium difficile is associated with significant morbidity and mortality. C. difficile infection (CDI) accounts for almost 500,000 illnesses annually. Several risk factors have been associated with the development and recurrence of C.
Methods: A risk assessment tool was developed to improve identification of patients at high risk for developing CDI. A two month pilot of the risk assessment tool was conducted at a 274-bed community hospital. The tool was completed on all adult patients ≥ 18 years admitted to the hospital through the emergency center. Patients were excluded from assessment if they were < 18 years, direct admissions to the hospital, or same-day surgery patients.

Results: A total of 1329 risk assessment tools were completed; 90.4% of patients were low-risk and 9.6% of patients were high-risk for development of CDI. Patients were tested for *C. difficile* in 2.4% and 14.8% of the low-risk and high-risk patients, respectively. Of those patients, 3.4% low-risk and 31.6% of high-risk patients tested positive for *C. difficile* (p < 0.05). Antibiotic therapy in the previous 30 days was the only risk factor significantly associated with a positive *C. difficile* diagnosis (OR, 7.0; 95% CI, 1.3-37.3).

Conclusion: The use of the *C. difficile* Risk Assessment Tool helped to identify those patients at high-risk for developing a CDI and may help to guide which patients should be tested for *C. difficile* if the patient experiences diarrhea during their hospitalization. Further validation of the tool should occur prior to implementation system-wide.

Disclosures: Authors of the presentation have nothing to disclose.

**Order Comments and Admin Instructions... An Epic Fail?**
Jacqueline Bozick, Amy Martin
Mother Frances Hospital, Tyler, TX

Background: Epic©/ConnectCare CPOE module allows two editable free-text fields upon CPOE. Administration instructions populate on the MAR while order comments are not readily visible. Both fields may be used interchangeably leading to potential medication errors (ME). The goal of this analysis was to examine the failure modes associated with system defaults used for supplemental medication order instructions.

Objective: Determine the impact of single versus dual free-text fields used for supplemental medication order instructions on potential ME

Methods: 380 medication profiles were reviewed on an inpatient unit over a 2-week timeframe pre/post-process improvement (i.e. dual to single supporting free-text field). Data collected using the Epic© i-Vent module included: medication, supplemental order content, ordering discipline, intervention, and time to potential ME identification.

Results: 33 potential ME were identified in the pre-process improvement group (Pre-PI) versus 21 in the post-process improvement group (Post-PI) related to improper supplemental order instruction documentation. Of 21 orders requiring intervention in Post-PI, 90.5% and 9.5% of errors were identified by a pharmacist and nurse, respectively. Pre-PI, 67.7%, 22.6% and 9.7% of errors were entered by physicians, nursing and mid-levels, respectively. Time to ME identification was 34% lower in Post-PI and ME were identified prior to dispensing more frequently (42% versus 54.5%).

Conclusions: Implementation of a single free-text field for supplemental medication order instructions at CPOE increases opportunities for pharmacist intervention prior to medication dispensing (i.e. at verification) and reduces time to error identification. Attention should be paid to supplemental free-text field defaults at CPOE as multiple fields may be associated with failure modes.

Disclosures: Nothing to disclose

**Cost Analysis of Standardizing Continuous Renal Replacement Therapies: A Pharmacist Perspective**
KM Cox, MR Ghazizadeh, HM Szerlip, S Ramsey, S Hayes
Baylor University Medical Center Dallas, TX

Background: Acute Kidney Injury (AKI) in the ICU has been increasing in incidence over the last decade. The need for hemodynamic stability and volume removal has allowed continuous renal replacement therapy (CRRT) to become the procedure of choice. Opportunities for cost efficiency are present when operations of practice are not standardized.
Objectives: We sought to investigate projected cost savings with standardizing CRRT inventory and processes while incorporating labor and waste cost into final analysis.

Methods: Baylor University Medical Center operates 118 adult ICU beds and performs approximately 220 CRRT treatments per month. Until September 2015, we only purchased 0 potassium (KCL) bags. This required pharmacy to add KCL and additives at the prescriber’s discretion. We analyzed utilization of prescribing practices for a 12 month period. In addition to calculating conversion to standard bags, we incorporated labor cost of compounding and transporting CRRT and waste of expired product.

Results: Over a 1 year period 48,547 five-liter bags are dispensed. Preparation time for six 5-liter bags declined from 37.5 minutes to 12 minutes with the new process. In the one month waste analysis, 67 bags were discarded due to expiration. With the proposed new process model, in a 12 month period, it estimated that we will save $469,879 in labor and material costs.

Conclusions: Changing our practice has the potential to produce significant cost savings without jeopardizing quality. This new approach to managing CRRT dispensing has allowed pharmacy personnel to shift workflow away from unnecessary labor.

Disclosure: 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.

Impact in Fentanyl Consumption: Changing Drip Titration From Weight Based to Non-Weight Based
Leanne Current, Jason Trahan, Jennifer Roth, Joe Kramer, Sarah Harrison
Baylor University Medical Center, Dallas, Texas

Background: Fentanyl drips are often utilized to control pain in the ICU. It is important to treat pain with the lowest effective dose of opioids to avoid unwanted adverse effects such as over sedation and ileus. Baylor Scott and White Health (BSWH) changed fentanyl drip titration from a weight based (mcg/kg/hr) to a non-weight based (mcg/hr) approach on Dec 2, 2014 to prevent over titration of fentanyl in the obese population.

Objective: To determine if the application of non-weight based fentanyl titration in the ICU resulted in less fentanyl consumption

Methods: This was a retrospective review comparing consumption of fentanyl drips at Baylor University Medical Center of BSWH in 2014 and 2015. Consumption of fentanyl was measured by number of bags purchased to maintain inventory par levels each year.

Results: Hospital average daily increased (718 to 738) and OR cases also increased (19,451 to 20,163) from 2014 to 2015. Additionally, the number of ICU patients with fentanyl drips increased from 1,913 and 2,026. Purchasing in 2014 and 2015 for fentanyl 2500mcg/mL was reduced from 12,100 bags to 9,575 bags and fentanyl 5000mcg/100mL reduced from 4,720 bags to 2,510 bags.

Conclusion: Consumption of fentanyl decreased when changing from a weight based approach to titration to a non-weight based despite applying the same pain scale, an increase in OR cases, an increase in hospital average daily census, and an increase in ICU patients with fentanyl orders. Fentanyl consumption decreased despite a shift to non-benzodiazepine sedatives and lighter sedation goals.

Implementation of a patient medication assistance program for hospital discharge prescriptions
RA Forbess, CE Smith, EM Veltz, WF Ventress
Houston Methodist Willowbrook, Houston, Texas

Background: There are many patients who cannot afford their medications or have a high degree of difficulty navigating the restrictions placed on them by insurance companies. It is as much the healthcare provider’s responsibility to make sure
that a patient can obtain a medication as it is to prescribe the right medication for the patient. Cost and insurance restrictions on outpatient medications must be reviewed as part of the discharge process for hospitalized patients.

Objectives: To establish a program to review the financial impact of discharge prescriptions on patients in order to ensure continuation of medications on an outpatient basis.

Methods: Seven medications were selected for the initial review. Pharmacy technicians would speak to patients on these medications regarding their medication history and insurance status. The patient’s insurance company would be contacted to determine coverage. In collaboration with the physician, the pharmacist would then take steps to ensure that the patient could afford and receive the appropriate treatment by either financial assistance, prior authorization and/or switch to a more affordable medication.

Results: Over a six-month period, 215 patients were seen with 35 prior authorizations completed, 115 trial cards and 76 co-pay/assistance cards given to patients, and 27 prescriptions changed to lower cost alternatives. This resulted in thousands of dollars in savings for patients.

Conclusions: This program showed that pharmacy can play a major role in assisting patients in making sure they have access to appropriate medications, as well as decreasing the time the prescriber spends on navigating the approval process.

Disclosures: The authors have nothing to disclose

Medication Utilization Review of Nicardipine at a Tertiary Medical Center

DS Henderson, KM Cox
Department of Pharmacy, Baylor University Medical Center, Dallas, TX

BACKGROUND – Acute hypertension is often managed with continuous intravenous drug therapy when patients are admitted to the hospital. Nicardipine, a dihydropyridine calcium channel blocker, is mainstay for multiple indications in this acute setting. The cost of nicardipine has increased dramatically in recent years warranting health care providers to seek alternative strategies for acute hypertension management and ensure appropriate allocation of pharmacy budget resources.

OBJECTIVES – We sought to analyze utilization of nicardipine at Baylor Medical Center in Dallas and initiate a process to streamline prescribing practices in order to avoid excessive cost and product waste.

METHODS – We obtained approximately 3200 nicardipine orders within a 12 month period utilizing Baylor University Medical Center Allscripts database. We identified two main sources of nicardipine entries. These included nicardipine embedded in order sets and manually entered orders by prescribers. In order to streamline the review process, we reviewed 5% of all orders for the purpose of capturing various practices within different service lines.

RESULTS – On average each patient in analysis used 3 bags per doses of nicardipine. The average time on nicardipine drip for all patients was 10.46 hours. The average time to start an oral scheduled agent after nicardipine started was 25.1 hours.

CONCLUSIONS – Following completion of this review, we have modified existing prescribing practices by providing guidelines within all nicardipine order sets. These practices include recommending alternative anti-hypertensive agents and outlining stricter guidelines for initiation with the intent to limit nicardipine use.

Disclosures: 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.

Impact of Emergency Pharmacist Participation in the Treatment of Acute Ischemic Stroke

KN Kohman, DS Henderson, SL Stevens, JS Garrett, DR Padgett
Department of Pharmacy, Baylor University Medical Center, Dallas, TX

BACKGROUND – According to the American Heart Association (AHA) stroke is the 5th leading cause of death. Studies have
demonstrated improved patient outcomes with earlier administration of intravenous tissue plasminogen activator (tPA) in relation to symptomatic onset of acute ischemic stroke (AIS). AHA guidelines recommend a door-to-needle time of 60 minutes or less due to the clinical benefits of earlier administration. However, studies have found that less than 30% of US patients are treated within this timeframe.

OBJECTIVES – To determine the impact of EPh participation on door-to-needle times for tPA in the treatment of AIS within an urban, non-profit, teaching hospital with comprehensive stroke center designation.

METHODS – A retrospective chart review comparing door-to-needle times for patients receiving tPA for AIS with and without an EPh present over a one year period. All patients presenting to the emergency department within the specified timeframe were included in analysis.

RESULTS – Eighty patients were identified. The proportion of patients with a door-to-needle time <60 minutes was greater when an EPh was present (57.5% vs. 37.5%). On average, patients received tPA 12 minutes faster when an EPh was present (63.7 vs. 75.7 minutes). On average when an EPh was present, patients received tPA within 6.6 minutes of physician order compared to 16.7 minutes when an EPh was absent.

CONCLUSIONS – EPh participation in AIS treatment resulted in a 12 minute faster average tPA administration time, which contributed to greater attainment of door-to-needle compliance within the recommended 60 minute time window.

Disclosures: Authors have nothing to disclose

Clinical Pharmacy Initiative Fosters Appropriate Use of Acid Suppressive Therapy
JD Krahl, RD Martin
Texas Health Resources Alliance Hospital, Fort Worth, TX

Background: Acid suppressive therapy (AST) is commonly used in the hospital setting. Recent attention has focused on potential adverse effects of AST when prescribed broadly during hospitalization especially for prevention of stress related mucosal disease. Infectious complications such as Clostridium difficile-associated diarrhea (CDAD) and nosocomial pneumonia have been attributed to use of AST.

Objectives: To decrease inappropriate use of pharmacologic AST at an 80-bed community hospital in Fort Worth, TX and to quantify the corresponding effect on drug expenditure and incidence of CDAD.

Methods: An initiative set in place in January 2013 to reduce hospital acquired CDAD included clinical pharmacist evaluation of all orders for pharmacologic AST. The Pharmacist receiving an order for AST would review and discontinue the order if no pre-defined indication was identified. Doses administered, cost savings measured in actual drug expenditure, and standardized infection rates (SIR) for CDAD were monitored during the review period.

Results: The three year program demonstrated a 53% decrease in the number of PPIs and 42% decrease in the number of H2RAs administered. An average of 9.8 pharmacy encounters per 100 patient days was found and an average of 1.7 encounters per 100 patient days resulted in an intervention. This initiative resulted in an annual forward drug cost savings of $23,100. The SIR for hospital acquired CDAD by 38% in the two year period from 2014 to 2015.

Conclusion: Pharmacist involvement in this program demonstrated a decrease in use of AST, decreased drug expenditure, and may help to reduce incidence of CDAD.

Disclosures: Nothing to disclose.
Evaluation of Daptomycin Use in Adult Inpatients within a Rehabilitation Hospital
SM Loughlin, CM Cuellar
TIRR Memorial Hermann, Houston, TX

Background: Antimicrobial use in hospitalized patients has escalated causing both an economic impact and a rise in resistant organisms. There is now a national commitment to reduce inappropriate antibiotic use by 20% in hospitalized patients by 2020. Daptomycin is an antibiotic with high specificity for resistant organisms, and its usage should be limited in order to maintain its effectiveness.

Objectives: The goals of this project are to describe the use of daptomycin in adult rehabilitation patients, to evaluate prescribing for appropriate indication and dosing, and to assess the incidence of adverse events directly associated with daptomycin.

Method: A retrospective chart review was conducted on all patients at TIRR Memorial Hermann receiving daptomycin from Jan. 1, 2012 - Sept. 30, 2015. Data was collected using the electronic health record.

Results: The majority of daptomycin therapy was pathogen directed and appropriately dosed. Forty-two percent of patients were treated with other antibiotics before the initiation of daptomycin. Inappropriate use of daptomycin was identified in 20% of patients. Weekly monitoring of CPK levels was not performed in the majority of patients and there was no documentation of myalgia for any patient.

Conclusions: Challenges exist on obtaining clear documentation from referring facilities regarding indications for antibiotics and duration of therapy. The majority of patients had daptomycin initially prescribed by an infectious disease physician; however once they transferred to TIRR, only 77% were followed by infectious disease. This project identified an opportunity to improve collaboration with ID physicians for antibiotic oversight to ensure proper indications and monitoring.

Medication Therapy Management (MTM) Pharmacist-Managed Post-Discharge Clinic to Improve Medication Adherence and Hospital Readmissions
KE Lutek, KS Alvarez, EI Moss, E Steen
Parkland Health & Hospital System, Department of Pharmacy, Dallas, TX & Parkland Health & Hospital System, Dallas, TX

Background: Previous studies have shown that direct pharmacist interaction with patients during transitions of care had a positive impact on the composite endpoint of decreasing inpatient readmissions and ED visits. In an effort to improve post-discharge medication adherence and decrease healthcare costs related to unplanned re-hospitalizations, a pharmacist-managed post-discharge clinic at Parkland Health & Hospital System was established in July 2014.

Objective: To determine the effect of a pharmacist-managed post-discharge clinic on hospital readmissions as evidenced by 30-day readmission rate.

Methods: A retrospective study was conducted from January 2015 to December 2015. All patients who were seen in Parkland Center for Internal Medicine (PCIM) pharmacist-managed post-discharge clinic were included in the study. The primary outcome was to determine the effect of a pharmacist-managed post-discharge clinic on hospital readmissions as evidenced by 30-day readmission rate.

Results: A total of six hundred eighty-two patients were enrolled in the study, with 376 of these (55%) completing a pharmacist-led MTM visit post-hospital discharge during the time frame specified. Thirty day readmission rate was 11.2% in patients with a completed post-discharge MTM, versus 16.7% for patients scheduled but not seen by a pharmacist (p=0.037). Medication-related readmission rate was 4.3% in the post-discharge MTM group, versus 6.2% in the group scheduled but not seen (p=0.250). During this time frame, there were 823 total interventions, with the most frequent intervention being education on medication adherence.

Conclusion: A pharmacist-managed post-discharge clinic in a large academic medical center improved overall thirty day hospital readmission rates.

Disclosures: None
**Always Know 3: A Patient Empowerment Multidisciplinary Approach to Improving Communication About Medicines In A Teaching Hospital**

Anna Garcia, BA, RphT; Griselda Navarro, RphT; Gloria Melchor, RphT; Maria Lara, RphT, LSSGB; Sumara Hussain, PharmD; Mahnaz Mazloomi, PharmD; Gilbert Medrano, RN; James Hesse, MBA, LSSGB; Merry Philip, RN, MSN; Sunny Ogbonnaya, BS, MBA, PharmD, LSSBB
Lyndon B. Johnson General Hospital, Houston, Texas

Background: In March 2015, a multidisciplinary team (Pharmacy/Nursing/Patient Satisfaction) implemented the Always Know 3 pilot program, aimed at improving a measurable patient outcome to better quality care. The seven-month pilot (March – September 2015) sought to partner with patients in improving communication about medicines. According to Agency for Healthcare Research and Quality (AHRQ) 1 and Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data published in December 20152, the national average with an “Always” response in Communication About Medicines is 64%.

Objective: HCAHPS scores of Unit 2C will improve from an average of 55% (10th percentile) to meet/exceed Hospital goal of 68% (75th percentile).

Method: Pharmacy staff provided patients Always Know 3 cards and instructed patients to ask:
What is the name of the medication?
Why do I need to take it?
What are the side effects?

Nursing staff informed patients during admission and provided answers to Always Know 3 at medication administration. Clinical Pharmacist in the unit provided support to nursing/patient, as needed.

Patient Satisfaction team tracked HCAHPS scores and provided performance reviews. Unit 2C’s previous three-month performance average was the baseline.

Results: HCAHPS scores in Communication about Medicine were as follows: March – 64.4%, April – 45.5%, May – 54.5%, June – 83.9%, July – 81.2%, August – 85.7%, and September – 86.7%.

**Old wives tale or new cure for UTI. Cranberry use in spinal cord injury**

D Pandya, A Oliver, J Roperes, A Stampas
Houston, TX

Background: Spinal cord injury (SCI) patients are at increased risk for development of UTI. Type A Proanthocyanidins (PACs), a component of cranberry, prevent colonization of pathogens in the urinary tract by inhibiting pathogen adhesion. PAC binds to the P.fimbriae of the pathogen thus inhibiting the pathogen from adhering to cellular wall.

Objectives: The objective of the study is to observe the rates of UTIs in catheterized spinal cord injured patients in an inpatient rehabilitation facility taking Ellura® 36mg daily.

Methods: Study Design: This is a retrospective Case Control study. One group received cranberry supplement and the other did not. Rate of UTI were tracked.

Results: UTI rates in the Ellura®cranberry group lower then in the control group. Days to UTI are lower in the Ellura®cranberry group. The dosing of Ellura® was 36mg daily in the study but some studies suggest since SCI pts are considered high risk patients 72mg dosing should be considered. E.coli, Pseudomonas aeruginosa have higher rates of infection in control group vs cranberry. Yeast UTIs higher in Ellura® group. This may be due to proliferation non P. fimbriae organisms like yeast.

Conclusion: Ellura® cranberry supplement may lower UTI rates in SCI patients although questions still remain regarding dosing and long-term consequences regarding pathogens

Disclosures: All the authors have nothing to disclose.
Implementation of “Carbapenem Drug Use Guidelines” to Reduce Inappropriate Prescribing of Carbapenems and Cost: a Focus on Meropenem
SA Patel, SP Phillips
Baylor Scott and White Medical Center at Carrollton, Carrollton, Texas

Background: Due to rising antibiotic resistance rates, rising drug cost, and in an effort to begin implementation of antimicrobial stewardship, usage of carbapenems needed to be addressed. The likely contributing factors were 1) the fact that the pharmacy department lacked a process for analyzing carbapenem orders for appropriateness and de-escalation and 2) provider practice.

Objectives: To encourage pharmacists to review carbapenem orders for appropriateness upon verification. To adhere to the Baylor Scott and White Health (BSWH) meropenem alternative dosing interchange for cost savings.

Methods: In August 2015, reviewed the “Carbapenem Drug Use Guidelines” provided by the BSWH Antimicrobial Stewardship Committee with pharmacists as well as providers who commonly prescribe carbapenems. Pharmacists were provided a “Carbapenem Restriction Pharmacist Workflow” document which highlighted patients who are eligible for carbapenem use, answers to frequently asked questions or physician encounters, and treatment alternatives. Designated pharmacists reviewed patients on carbapenems for de-escalation. Reviewed the BSWH meropenem alternative dosing interchange with pharmacists.

Results: Meropenem data was collected from April 2015 to January 2016. May 2015 had the highest number of meropenem doses at 1,009, while November 2015 had the lowest at 253 resulting in an approximate reduction of 75%. As a result, cost of meropenem usage was reduced by nearly 79%.

Conclusion: Implementation of the guidelines and adherence to the alternative dosing resulted in a decrease in meropenem use and cost for patients and pharmacy department. Ertapenem use varied before and during the implementation process suggesting further work needs to be done in this area.

Disclosure: The authors have nothing to disclose.

Single-Center Retrospective Analysis of Outcomes with Anticoagulation Reversal Strategies in Cardiac Transplantation and Development of a Standardized Approach
T Sam, K Cox, B Lima
Baylor University Medical Center Dallas, TX

Clinical Category

Background: Reversal of vitamin K antagonist (VKA) anticoagulation prior to orthotopic heart transplantation (OHT) is required to prevent excessive perioperative bleeding. There is limited data on a standardized approach to anticoagulation reversal (ACr) strategies prior to OHT.

Objectives: We sought to characterize our center’s experience with the utilization of 4-factor prothrombin complex (4F-PCC) compared to fresh frozen plasma (FFP) for ACr prior to OHT.

Methods: This is a single-center, retrospective cohort of patients admitted for OHT between August 2013 and March 2015 at Baylor University Medical Center in Dallas, TX. Final analysis only included subjects requiring ACr prior to procedure. Data of interest includes immediate prior history of anticoagulation (and indication), international normalized ratio (INR) prior to reversal, documentation of reversal (timing and choice of medication), and use of blood product in peri- and post-operative period. Control treatment consisted of FFP and phytonadione (vitamin K).

Results: The 4F-PCC cohort required significantly less FFP but compared to controls, had equivalent survival, and rates of reoperations for bleeding. The 4F-PCC arm trended towards requiring more PRBC however statistical significance was not reached. Opportunities identified included optimization of appropriate use of 4F-PCC, FFP and vitamin K and potential to develop a standardized approach to management of ACr prior to OHT. A multidisciplinary workgroup was established to develop of an algorithm for management of ACr prior to OHT.
Conclusions: Relative to the administration of FFP, 4F-PCC does not appear to significantly reduce bleeding events or transfusion of red blood cells in this patient cohort.

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.

**IVIG Protocol and Standardization Across A Health System**
Teena Sam, Leanne Current, Rema Thyagarajan
Baylor Scott and White, Dallas, Texas

Background: Intravenous immune globulin (IVIG) has been used for a variety of immune and inflammatory disorders. Due to the cost, shortages and growing off-label use, evidence-based guidelines are essential. Controversies around IVIG dosing include lack of consensus on indication specific dosing and appropriate weight utilized for dose calculations.

Objective: The objectives of this study were to identify opportunities for dose optimization in patients prescribed IVIG and to implement a pharmacy driven protocol across Baylor Scott and White Health.

Methods: This was a multicenter, retrospective chart review of adult patients who received IVIG as a n inpatient across 12 Baylor Scott and White hospitals. Data was collected at 11 sites from April 1, 2015 through June 30, 2015 and extrapolated into annual estimates. Baylor University Medical Center collected data from January 1, 2014 through December 31, 2014. An evidence based IVIG dosing protocol with expert consensus was compared to each dose received to determine a dose difference if the protocol had been applied.

Results: A potential annual IVIG savings of 14,415 grams was found, with 11/12 hospitals finding IVIG savings opportunities. Indications with the largest projected IVIG savings were neurology and hematology/oncology. Results of this review were presented at key clinical meetings and the protocol was approved at system P&T for future use.

Conclusion: Standardized IVIG dosing could reduce errors and result in cost savings. According to Lexicomp, Privigen® is $780 per 5gm vial. A dose reduction of 14,415 grams has a savings upwards of $2,248,740 based on this number.

**Impact of Clinical Pharmacists on Discharge Prescription Callbacks within the Emergency Department**
SL Stevens, KN Kohman, DS Henderson, JP D’Etienne
Department of Pharmacy, Baylor University Medical Center, Dallas, TX

BACKGROUND – A majority of adverse events following hospital discharges are related to medication therapy. Pharmacist involvement in patient care processes has been shown to increase quality of care and patient satisfaction, as well as decrease health care costs.

OBJECTIVES – To evaluate the impact of emergency medicine pharmacists (EPh) on discharge prescription callbacks within the emergency department (ED).

METHODS – A retrospective review of documented interventions was performed for a 6-month period to evaluate for trends, as well as nursing and provider time saved through the program.

RESULTS – There were 561 interventions documented during the 6-month period. Total estimated nursing and provider time saved was 6,180 minutes. An average time of 11 minutes was spent per intervention. The most common intervention was clarification of a prescription. Analgesics and anti-infective agents were the most common drug classes intervened upon, comprising 42.5% and 28.6% of interventions, respectively.

CONCLUSIONS – Identifying and characterizing reasons for outpatient pharmacy callbacks has provided the ED with insight into useful system changes that may be implemented in order to decrease errors and improve medication safety for our patients. By reducing the number of outpatient prescriptions errors, we anticipate fewer pharmacy callbacks for clarification, which in turn, will decrease workload on pharmacy and ED personnel.

Disclosures: Authors have nothing to disclose
**Pharmacist-Driven Inpatient Allergy Testing Program**

S TARVER, KS ALVAREZ, J CHEN, N FRANKS, D KHAN  
Parkland Health and Hospital System, Dallas, TX

BACKGROUND: Patients who report a history of a penicillin (PCN) allergy often receive different treatment when they present to a hospital than those without a history of PCN allergy. Fears of anaphylaxis have led clinicians to forgo beta-lactam antibiotics leading to increased length of stay, development of antibiotic resistance, and use of alternative and possibly inferior antibiotics.

PURPOSE: To reduce exposure to broad-spectrum and unnecessary antibiotics

METHODS: A pharmacist-driven penicillin allergy testing protocol was implemented with allergy physician oversight. Patients were screened using the electronic medical record (EMR) and allergy tests performed in an inpatient setting by a clinical pharmacist. Documentation in the EMR was completed using smart forms and prebuilt template notes. Antimicrobial usage and length of stay was collected for the inpatient stay.

RESULTS: A total of 1049 patients were screened over a 14 month period and 209 were formally evaluated. One-hundred and eighty two patients had their penicillin allergy successfully removed resulting in saving 537.5 days in broad-spectrum or inappropriate antibiotic use.

CONCLUSIONS: This program has improved the quality of care for patients by enabling the use of needed beta-lactam antibiotics. By proactively searching out and testing eligible admitted patients, the goals are to improve treatment for patients, avoid adverse events from non-penicillin antibiotics, aid in antimicrobial stewardship efforts, and reduce the length of hospital stay when possible.

Disclosures: Authors have nothing to disclose

**Practitioner – Education Category**

**Impact of a Remote Patient Discharge Counseling Program for Three Rural Hospitals in Texas**

Hunter Pharmacy Services, Austin, TX

Background: Patients discharged home from rural hospitals with medication changes are at risk of readmission within 30 days when they are not counseled by a pharmacist. Hunter Pharmacy Services (HPS) provides pharmacist driven discharge counseling to three rural Texas hospitals.

Objective: To evaluate the impact of pharmacist medication counseling and disease education through telephone contact 48-72 hours post-discharge.

Methods: A retrospective chart review was conducted for all patients referred to HPS from June 2013 to December 2015. Patients were referred for pharmacist counseling based on pre-determined criteria. Qualified patients were then contacted via telephone within 48-72 hours post-discharge. Analyses of readmission rates and medication discrepancies were performed to compare outcomes of patients contacted versus those not contacted.

Results: A total of 1,215 patients were referred for pharmacist counseling. 890 patients (73.3%) were successfully contacted. The overall 30 day readmission rate was 6.9% for contacted patients versus 15.2% for patients unable to be contacted. Of the patients contacted, 400 patients (44.9%) had medication discrepancies discovered by the pharmacist.

Conclusions: Successful pharmacist post-discharge counseling reduces 30 day readmission rates and helps identify medication discrepancies.

Disclosure: The authors have nothing to disclose.
Tech Savvy or Tech Naive: Social Media Utilization by Pharmacy Schools
CK Horlen, BL Frei
University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX

Background: Social media has become a tool for pharmacy schools to engage the community, current students, alumni, and prospective students. Schools are aware of the potential advantages of utilizing social media for marketing and communications, but use may not be optimized.

Objectives: Objectives were to analyze Texas pharmacy schools use of social media and to determine if any correlations between social media use and school characteristics exist.

Methods: Texas pharmacy school websites were reviewed for links to social media sites. Two faculty members independently searched social media platforms for pages specific to each school. For each site identified, the number of “followers” were recorded. The number of posts on each site were counted from August through November 2015. Descriptive statistics were utilized to describe the use of social media for each Texas pharmacy school. T-test was used for correlation statistics. Accreditation dates were estimated for those schools not yet accredited.

Results: Of 8 pharmacy schools, 6 used Facebook, 2 used Instagram, and 4 used Twitter. Although schools utilizing multiple social media platforms had the most “followers” on Facebook, most schools posted more Tweets per month. No correlation was found between use of social media and pharmacy school characteristics, however the sample size was small.

Conclusions: Most Texas pharmacy schools utilize social media, with Facebook and Twitter being the most used. Since college students are adept at using social media, schools can use this technology to aid recruitment, student/alumni relations, and community engagement.

Disclosures: CK Horlen has nothing to disclose. BL Frei is on the TSHP Research & Education Foundation Board.

Effectiveness of an Advanced Pharmacy Practice Experience (APPE) Boot Camp to Prepare Pharmacy Students for Clinical Rotations Utilizing Recorded Presentation Online.
RA Tabor, JT Copeland, NC Farrell, VG Phillips, TC Shank, A Zertuche
University of the Incarnate Word, San Antonio, TX

Background: All students are required to complete APPE rotations. Feik School of Pharmacy required a recorded online presentation of an APPE boot camp as preparation for their APPE rotations. Knowledge and confidence are essential for transitioning from the classroom into their fourth year pharmacy clinical and dispensing roles.

Objectives: This study was designed to analyze the effectiveness of an online recorded educational preparatory course (APPE Boot Camp) designed to prepare students for their clinical APPE rotations.

Methods: Third year pharmacy students were given assessments before the program. One week after viewing the online recordings of the program, and two months after the APPE boot camp recordings were viewed. All three assessments evaluated the same items of knowledge and confidence. The questions were developed by the Feik School of pharmacy faculty members who presented the APPE boot camp topics.

Results: The mean (SD) students’ scores for the first post-APPE test 11.5 (1.68) were higher compared with the pre-test 10.9 (1.40). This is a statistically significant increase of 0.63 points (95% CI, 0.08 to 1.18 points, t = 2.2994, p=0.0255, df = 53). An increase in their confidence score in performing successfully was shown. A Wilcoxon signed-ranks test indicated that the two post-APPE Boot Camp test scores were not significantly different, Z=-0.198 , p=0.8429.

Conclusion: Providing the APPE boot camp program prepares third year students for their clinical rotations by increasing their knowledge and confidence for transition from the classroom to the clinical practice sites.

Disclosure(s): RA Tabor, JT Copeland, NC Farrell, VG Phillips, TC Shank, A Zertuche have nothing to disclose.
Resident-Fellow-PGY1 Category

Delays in Chemotherapy Administration at a Large, Academic Medical Center
JN Addo, M Salazar
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: Medication errors can occur as wrong drug, wrong patient, wrong dose, wrong route, or wrong time. We focused on the instances of “wrong time” error, specifically related to delays in administration of IV chemotherapy medications for inpatients. In order to identify sources of delay, we recorded the times at which all steps of the process occurred, in the hopes that this data would indicate specific areas for improvement.

Objective: To determine the length of time between each measured step and the total length of time between when the patient was admitted to the hospital and when the first IV chemotherapy agent was administered.

Methods: This is a single-center, retrospective observational study. Patients included were those 18 years or older, hospitalized between October 1, 2015 and February 29, 2016 and for whom an order for IV chemotherapy was faxed to the inpatient pharmacy. Data analysis used descriptive statistics, including median and interquartile range.

Results: At time of interim analysis, 23 patients were analyzed. Total administration process took a median of 15 hours, 31 minutes (IQR 11:00 – 22:55). The time between line order and placement took the longest, at median 3 hours and 1 minute (IQR 1:57 – 12:45), approximately 19.44% of the total. Other sources of delay included time to administer medication after it arrived and collection of ordered labs.

Conclusions: Data revealed large variability in each step of the process. Time between ordering of IV line access and placement was identified as a major contributor to chemotherapy administration delays.

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 this presentation.

Comparison of initial warfarin dosing in hospitalized patients: Low Dose Versus Standard Dose Strategy
AM Alamri, YS Almogbel, M Salazar, KS Putney, M Bayat
CH St. Luke’s Health, Houston, Texas

Background: Determining the appropriate starting dose of warfarin can be a challenge for hospitalized patients, and may affect the hospital length of stay and facilitation of outpatient monitoring.

Objectives: To evaluate the safety and efficacy of warfarin dosing protocol at the pharmacy department at the CHI-Baylor St Luke’s Medical Center starting warfarin therapy at a low dose (2.5mg) in patients meeting inclusion criteria compared with standard dose.

Methods: A retrospective observational study was conducted in patients who received warfarin therapy. Patients were divided into two groups. Group 1 patients received an initial warfarin dose of 2.5 mg and group 2 patients received a ≥5 mg dose. The primary end point was defined as the number of days necessary to achieve INR test values ≥2.

Preliminary result(s): A total of 20 Patients were considered eligible for the study. Patients in group 1 showed statistically significant difference in achieving the primary end point compared to patients in group 2(p<001). The mean time to reach an INR value greater than or equal to 2 (8.6 (±2.4) days versus 5.2 (± 1.55) days) was higher for the 2.5 mg group than the ≥5 mg group. However, the mean dose to reach an INR value of ≥2 (4.85 (±1.10) mg vs. 6.23 (± 1.22) mg) was lower for the 2.5 mg group than the ≥5 mg group.

Conclusion(s): Patients who received a starting dose of 2.5 mg required a longer time to reach therapeutic INR than patients who received a starting dose of ≥5 mg.

Disclosure(s): The authors of this study have nothing to disclose.
Electronic Health Record Downtime Procedures for Pharmacy within a Quaternary Academic Medical Center
JA Blackwell, B Scardino, H Pham, E Banda, and DA Varkey
City of Houston, Houston, Texas

Background: Public and private healthcare providers are required to adopt and demonstrate “meaningful use” of electronic health records (EHR) to maintain Medicaid and Medicare reimbursements since January 2014; however, many institutions still need to create and implement downtime procedures in the event of the EHR malfunctions for an extended period of time. Between February 4-6, 2016, Baylor St. Luke’s Medical Center (BSLMC) experienced the longest EHR downtime since the current EHR system implementation in June 2013.

Although the institution has procedures in place for downtimes up to 8 hours, this downtime process continued over 72 hours.

Objectives: To update the EHR downtime procedures to account for downtimes exceeding eight hours or extending beyond a batch or cart-fill time. To revise the downtime procedures to reflect safe and efficient medication distribution practices, and ensure accurate charge capture post-downtime.

Methods: After a literature search regarding downtime procedures was performed, a gap analysis was completed to understand where pharmacy can improve the medication distribution process, standardize practices/documentaion, and improve patient outcomes.

Pharmacist interventions/reported errors were assessed. Interdisciplinary meetings were used to discuss opportunities to improve the medication distribution process from central pharmacy and automated dispensing machines.

Results: Preliminary flowchart of the improved process was developed. During downtime, at least 60 interventions or errors were documented.

Conclusion: It is necessary for institutions to be prepared and implement a process for extended downtime (> 8 hours or extending past batch times), which should include postdowntime procedures including reconciliation and standard documentation process for charge capture.

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.

Decreasing the Rate of Inappropriate Proton Pump Inhibitor Use in the Emergency Center
H Cao, TN Johnson, C Feng, PS Chaftari
MD Anderson Cancer Center, Houston, TX

Background: The use of proton pump inhibitors (PPIs) have been high in many healthcare settings nationwide and are associated with potentially significant adverse drug effects.

Objective: This study aims to reduce the amount of inappropriate PPIs ordered within our institution’s emergency center (EC).

Methods: This study was performed as a quality improvement project. Census data and quantity of PPIs dispensed from the EC between October 2014 -April 2015 were retrieved. A randomized, retrospective chart review of patients was performed to assess the appropriateness of PPI use based on both FDA indications as well as indications supported by primary literature sources. An education plan was formulated as the study intervention to inform providers of the proper indications.

Results: The number of single dose IV pantoprazole ordered prior to the intervention period was 2,983 over the seven months. Based on a retrospective chart review of 150 unique patients who received single doses of IV pantoprazole, ninety-nine patients (66%) did not have valid indications for PPIs. Thirty-one of the ninety-nine patients (31.3%) were admitted with pantoprazole as a part of their inpatient medications. We also identified six patients (4%) with major drug interactions.
Conclusions: A significant proportion of patients who presented to the emergency center received doses of pantoprazole without valid indications. Educating providers regarding adverse effects and proper indications of PPIs may decrease the rates of inappropriate use. Reduction in PPI use will be determined with ongoing evaluation.

Disclosures: H Cao, TN Johnson, C Feng, and PS Chaftari have no personal or financial disclosures to provide.

**Evaluation of apixaban and associated outcomes in dialysis patients at a large academic medical center**

NQ Dau, M Salazar, M Alam, M Bayat

CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: In January 2014, the Food and Drug Administration approved a labeling change for apixaban to include patients on dialysis. Per this labeling change, no dose adjustment is required for patients with renal impairment including those with end-stage renal disease (ESRD) on hemodialysis. However, dose adjustment is recommended in nonvalvular atrial fibrillation patients who meet the criteria for dose adjustment. The dosing recommendations are based on pharmacokinetic and pharmacodynamic data in 8 subjects on dialysis. Thus, the safety of apixaban in dialysis is unknown.

Objectives: To evaluate the use of apixaban in patients on dialysis and examine associated outcomes.

Method(s) or Procedure(s): This is a single-center, retrospective, observational chart review of dialysis patients on apixaban admitted to our institution. The primary endpoint was admission or readmission due to a composite of minor or major bleeding, systemic embolism, or stroke at any time while on apixaban and dialysis. The secondary endpoints were documented occurrence of major bleeding, minor bleeding, venous thromboembolism (VTE), stroke, and all-cause mortality.

Result(s): An interim analysis of 12 patients was performed. Four dialysis dependent patients (33.3%) were admitted for a minor or major bleeding event. One patient (8.3%) was admitted with gastrointestinal bleeding requiring blood transfusion. There were no admissions or re-admissions due to VTE or stroke. There was one death (8.3%) attributed to acute congestive heart failure.

Conclusion(s): Four out of 12 patients who received apixaban while on chronic hemodialysis were admitted due to bleeding. All were receiving appropriately reduced dose of apixaban 2.5 mg twice daily.

Disclosure(s): 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.

**Prioritizing the need for pharmacy-led admission medication histories to prevent adverse drug events – A risk score validation**

GM Gayed, KS Alvarez

Parkland Health & Hospital System, Dallas, TX

Background: Parkland Health and Hospital System (PHHS) implemented a new medication reconciliation initiative. A team consisting of one pharmacist and three pharmacy technicians utilizes a risk scoring system to identify patients at high risk for experiencing adverse drug events (ADEs).

Objective: To validate the risk scoring system implemented in the electronic medical record.

Methods: This study was a retrospective chart review of 100 BPMHs completed by the medication reconciliation team between October 2015 and November 2015. The primary outcome was the correlation of the weighted and unweighted risk scores and recommendations made by the pharmacist-led team. Secondary outcomes included: comparisons of pharmacist-activated versus provider-activated medication history consults, significance of the recommendations, and 30-day returns to the hospital for care.

Results: A total of 1,071 recommendations were reviewed and 742 were included. The \( r^2 \) for current weighted and unweighted risk scores and recommendations was 0.0213 and 0.0219, respectively. The mean risk score was higher in the pharmacist-activated versus the provider-activated BPMHs (21.8 ± 8.7 vs. 18.0 ± 10.2, respectively). There were more
interventions in the provider-activated BPMHs (14.3 ± 12.6 vs. 6.9 ± 3.9, respectively). Of all the recommendations made by the medication reconciliation team, 41.8% were acted upon by the providers. Thirty-five percent of patients returned to the hospital within 30-days of discharge.

Conclusions: A risk score helps identify high-risk patients for medication history completion by pharmacy. The results provide insight that modification of the scoring system is needed to better identify high-risk patients.

Disclosures: GM Gayed and KS Alvarez have nothing to disclose concerning possible financial or personal relationships with commercial entities.

**Evaluation of Prophylactic Antibiotic Regimens on Recurrence and Mortality in Spontaneous Bacterial Peritonitis**

SS Glaess1,2, RL Attridge1,2, RL Brady1,2, RT Attridge1

1University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX
2The University of Texas Health Science Center at San Antonio, San Antonio TX

Background: Current guidelines recommend antibiotic prophylaxis in patients with cirrhosis who survive an episode of spontaneous bacterial peritonitis (SBP). Limited data support specific prophylactic strategies.

Objectives: To compare SBP recurrence and mortality at 90-days and one-year in patients with cirrhosis and a history of SBP who received daily vs. once-weekly antibiotic prophylaxis.

Methods: We performed a single-center, retrospective cohort study of adults (≥18 years) with a peritoneal fluid analysis from 01/2010-11/2015. Eligible patients had peritoneal fluid polymorphonuclear (PMN) leukocyte counts ≥250 cells/mm³. Initial secondary SBP prophylaxis regimens were used to stratify patients into daily or once-weekly groups. Primary outcomes were analyzed with Fischer’s Exact test.

Results: Of 286 patients with peritoneal fluid samples, 25 patients met inclusion criteria. Most (64%) were male; mean age was 54 years (SD±7.98). Once-weekly antibiotic prophylaxis regimens were more common than daily regimens (12 vs. 6); 7 patients received no SBP prophylaxis. Most patients (88.9%) received either daily or weekly ciprofloxacin. Overall 90-day and one-year mortality were 20% and 56%. Compared to daily regimens, once-weekly regimens had numerically-higher rates of SBP recurrence at 90-days (80% vs. 0%, p=0.33) and 1-year (100% vs. 0%, p=0.17); however, there were no differences in mortality between once-weekly and daily regimens at 90-days (8.3% vs. 16.7%, p=1.0) or one-year (50% vs. 50%, p=1.0). Patients who received no prophylaxis had higher rates of 90-day (42.9%) and one-year mortality (71.4%) than both the once-weekly and daily groups.

Conclusion: Once-weekly SBP prophylaxis may be associated with higher SBP recurrence rates compared to daily regimens.

Disclosures: All authors report nothing to disclose.

**Evaluation of Linezolid Use in a Community Hospital**

JM Guastadisegni, D Hu, P McDaneld

Memorial Hermann Memorial City Medical Center Houston, Texas

Background: Increased administration of broad spectrum antimicrobial agents has led to an increase in various Gram-positive pathogens and their resistance rates. At our community hospital, linezolid is often used as an alternative to vancomycin in resistant staphylococcal and enterococcal infections. Currently, there are no restrictions at this institution for prescribing linezolid.

Objectives: The objective of this poster is to evaluate the appropriateness of a community hospital’s prescribing habits of linezolid and to describe the effectiveness and safety of the medication.

Methods: This single-center retrospective observational study will include adult patients that received at least one dose of linezolid at our hospital between September 2015 and February 2016. Patients will be identified using the electronic medical record system, and the following data will be collected: patient demographics, type of infection, isolated pathogen
Evaluated linezolid use in hospital settings

Preliminary Results: Of the twenty-four patients included in the study, linezolid was administered most commonly for skin and skin structure infections (42%), followed by urinary tract infections (17%), pneumonia (12%), and bacteremia (8%). Enterococcus was isolated in 30% of patients, Staphylococcus aureus in 22%, and 30% of patients had no culture growth.

Conclusion(s): Research is still in progress.

Disclosures: JM Guastadisegni has nothing to disclose. D Hu has nothing to disclose. P McDaneld has nothing to disclose.

Evaluation of Daptomycin Use at a Large Academic Medical Center

WW Guo, K Phe, HR Russo
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: Infections caused by antibiotic-resistant Gram-positive organisms are associated with poor clinical outcomes, higher morbidity/mortality, and increased hospital costs. Daptomycin is approved for treatment of Gram-positive infections. Despite being one of the highest-cost drugs on our hospital formulary, it remains frequently utilized at our facility. To minimize waste and ensure appropriate use, daptomycin is restricted to Infectious Diseases physicians at our institution.

Objective(s): To evaluate the utilization of daptomycin at our institution including the prescribing patterns, efficacy, and safety monitoring.

Methods: This is a single-center, retrospective, observational review of randomly selected patients who were admitted to our institution during 2015 and received daptomycin therapy. For each eligible patient, information was obtained from the patient’s medical record including demographic information, indication for therapy, dose, microbiological information, and adverse effects.

Results and Conclusion(s): An interim analysis of 51 patients was performed. Skin and soft tissue infections were the most common indication for daptomycin use (25%), followed by empiric use prior to de-escalation (24%). Daptomycin was used most commonly for treatment of Enterococcus (Vancomycin Resistant Enterococcus 25%, Vancomycin Sensitive Enterococcus 17%). The most common dose utilized was 8 mg/kg based on actual body weight, with a range of 4 to 10 mg/kg. Clinical cure was observed in 64.3% of patients, and microbiological cure in 80%. A majority of patients received baseline CPK monitoring, with 5.9% of patients developing elevated CPK after start of therapy. Data collection is ongoing and necessary to better ensure appropriate use of daptomycin at our institution.

Disclosures: WW Guo, K Phe, and HR Russo 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.

Pharmacy Role in the Primary Management of Total Parenteral Nutrition in a Single Institution

Randall Hinojasa, PharmD
St. David’s North Austin Medical Center, Austin, TX
The University of Texas at Austin

Background: The utilization of pharmacists to manage parenteral nutrition is a common practice in many other institutions; but at our hospital, pharmacy currently has no role in parenteral nutrition assessment, dosing, or ordering in adult patients.

Methods: In this study, a pharmacist assumed the role of writing and dosing parenteral nutrition orders in adult patients throughout the hospital for the 4th quarter of the fiscal year in an effort to adopt guidelines recognizing the appropriateness and provision of parenteral nutrition set forth by the Society of Critical Care Medicine and the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.). By retrospectively applying these guidelines to our institution over the
previous four months, we realized that roughly one-third of all adult patients receiving parenteral nutrition orders did not meet criteria and received a total of over one hundred parenteral nutrition products.

Physicians were contacted on a case-by-case basis when parenteral nutrition was ordered, and some physicians submitted consultations to pharmacy requesting parenteral nutrition services. We hypothesized that by adding parenteral nutrition into our existing consultation services; pharmacists could accurately assess the appropriateness for beginning parenteral nutrition and optimize the dosing formulas on orders deemed appropriate. This effort could see $150,000 in possible savings from product costs alone, plus an even greater amount saved considering a decrease in parenteral nutrition complications and labor for administration.

**Evaluation of Exparel® Use and Cost at UTMB Health**

HA Huynh, RS Ferren, JK Welch
UTMB Health, Galveston, Texas

Background: Liposomal bupivacaine (Exparel®), a nonopioid analgesic, has shown a decrease in post-surgical pain scores and opioid use. Although the manufacturer only recommends dosing for bunionectomies and hemorrhoidectomies, numerous off-label uses have been documented. At UTMB Health, Exparel® was restricted to certain physicians. Due to increased demand, the restriction was removed in June 2014.

Objectives: To evaluate the use of Exparel® within UTMB Health and determine the impact on costs before and after the restriction was removed.

Methods: A retrospective chart review of 369 surgery patients who received at least one dose of Exparel® from January through March 2014 and January through March 2015 were included.

Results: A total of 287 patients were included in the evaluation. During the study periods reviewed, the number of patients receiving Exparel® increased from 94 to 193 and cost increased from $26,790 to $57,900 after the restriction was lifted. Exparel® was administered for various types of procedures. Most of the use was from general (60.3%) and plastic (26.5%) surgery services. For post-surgical pain management, 56 patients (19.5%) did not receive opioids, while the remaining 231 patients (80.5%) received opioids. Of the 287 cases, an estimated 40% were classified as outpatient procedures, which had a shorter length of stay and lower amount of opioids used compared to inpatient procedures.

Conclusion: After the Exparel® restriction was lifted, use increased by 105% and cost increased by 116%. Restricting Exparel® use to outpatient surgeries is a cost-effective approach to allow continued use in a select patient population.

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

**New Parkland Hospital Move Impact on Pharmacy Practice Model, Drug Distribution & Technology**

A Islami, CA Berge
Parkland Hospital & Health System, Dallas, TX

Background: Parkland Hospital moved to a new facility on August 20, 2015, which saw the implementation of new technology and adoption of a centralized distribution practice model. The goal is to increase the time decentralized clinical staff pharmacists spend on patient care activities while improving medication distribution.

Objective: Determine the impact of implementing a centralized distribution pharmacy model on the workflow of both the clinical staff pharmacists and central pharmacy.

Methods: A retrospective review was performed from January to July 2015 and November 2015 to February 2016 of order verification and delivery time. Additionally, a retrospective review was performed of redistributed medication volume and medication distribution by area from September 2015 to February 2016.

Results: The centralized distribution model has shown a difference of 1.8 minutes or a 9% decrease in order verification time (p=0.02). The delivery turnaround time average for February 2015 was 44 minutes, which decreased by 75% when
compared to 11 minutes in February 2016. The medication distribution by area showed a majority occurred via the Pyxis® medication dispensing systems, which accounted for 71% of all distributions. The percent of redistributed medications decreased by 1.2% from 4.01% to 2.81% (R2=0.7203).

Conclusion: Overall a positive impact on the workflow of clinical staff pharmacist and central pharmacy was seen with the adoption of a centralized distribution practice model post-move. Optimization processes aimed at improving operations to further enhance patient care are ongoing within the pharmacy department.

Disclosure: The authors have nothing to disclose concerning possible financial or personal relationships with commercial entities.

Impact of an Emergency Department’s Pharmacist-Driven Culture Follow-Up Program
L Johnson, B Murdock, C Cocchio, A Martin
Trinity Mother Frances Hospital, Tyler, Texas

Background: Antimicrobial stewardship is of crucial importance in the emergency department (ED), as antibiotics are the most commonly prescribed medications at discharge. One specific way ED pharmacists can impact antimicrobial stewardship is through a culture follow-up program. The pharmacist has the potential to improve patient outcomes by promptly reviewing culture results and when necessary, aiding prescribers in the appropriate revision of antibiotic regimens.

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

Methods: Data was collected retrospectively through EMR chart review. Positive urine cultures were reviewed for a 5-month time period, before and after pharmacist intervention. Historically, culture review was managed by nursing staff. The primary outcome was a composite endpoint of treatment failure including ED or Trinity Clinic revisit within 14 days or drug-bug mismatch.

Results: A total of 384 positive urine cultures were included and reviewed for analysis. Revision of empiric antimicrobial therapy was required in 23% of cases. There was a 9% reduction in the treatment failure rate in the pharmacist driven follow-up group versus standard of care culture follow-up group (p=0.035). Drug-bug mismatch was significantly reduced by over 7% (p<0.0001). 14-day revisit to ED or Trinity Clinic was reduced by 5% (p=0.25).

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

Disclosure(s): The authors of this presentation have nothing to disclose concerning possible financial or personal relationship with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

Evaluation of albumin use in the intensive care unit
S Kim, D Hu
Memorial Hermann Memorial City Medical Center, Houston, Texas

Background: Albumin is a physiological plasma expander frequently utilized to manage patients in the intensive care unit. It can be an appropriate treatment option for certain indications, including large volume paracentesis, type 1 hepatorenal syndrome, and hypovolemia after inadequate response from crystalloid therapy. The evidence in literature is variable for numerous other disease states. Despite the lack of clinical evidence, albumin continues to be used to manage patients in the Memorial Hermann Memorial City Medical Center intensive care units.

Objectives: To evaluate the use of albumin at Memorial Hermann Memorial City Medical Center intensive care units for appropriateness of indication.
Methods: This study is a single-center, retrospective evaluation of albumin use in intensive care unit patients from November 2015 to December 2015. No intervention will be performed. The electronic medical records are reviewed for patient demographics, indications for albumin use, and patient outcomes.

Results: N/A

Conclusion: N/A

Disclosures: Authors of the presentation have nothing to disclose.

Identifying Failures in Barcode Medication Administration Scanning in the Emergency Department
A Le, S Parekh, B Willis, D Dumitru, R Cox, JA Tipton
Memorial Hermann Health System, Houston, Texas

Background: The emergency department (ED) is prone to medication errors due to rapid fluctuations in patient volume and acuity levels, use of verbal orders, and immediate dispensing and administration of medications. Barcode medication administration (BCMA) reduces errors related to medication administration by ensuring that the right medication is given to the right patient at the right time. Although appropriate BCMA utilization can reduce medication administration errors by up to 80%, factors such as alert fatigue and delay in synchronization of the information systems can limit its use.

Objective: To identify failures and propose solutions in the BCMA scanning process in the Memorial Hermann Memorial City ED by analyzing alerts and processes leading to workarounds at the bedside.

Methods: Alerts triggered through BCMA utilization from December 1, 2015 through February 29, 2016 were retrospectively reviewed. The Pareto Principle was employed to determine which medications to address based on the frequency of the alerts. The medications were then categorized into the process improvement framework of people-process-technology. Interventions are being implemented based on the identified failures.

Results: Approximately 25% of the alerts were related to the people component of the BCMA process due to factors such as alert fatigue and anticipation of medication not scanning. About 50% of the alerts were related to the medication use process, such as ordering or dispensing from the automated dispensing cabinets. The remainder was related to technology, such as formulary and order set build and computer setup.

Conclusion: Pending final results.

Disclosures: Authors have nothing to disclose.

Evaluation of Alvimopan Use at a Quaternary Academic Medical Center
EM Lessmann, CE Huls, KS Putney, SE Michaud
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: Postoperative ileus (POI) is impairment of bowel motility after surgical intervention which prevents transit of intestinal contents or tolerance of oral intake. POI is associated with increased incidence of postoperative morbidity and hospital length of stay (LOS). Alvimopan, a peripherally acting mu-opioid receptor antagonist, is Food and Drug Administration (FDA) approved to accelerate the time to upper and lower gastrointestinal recovery following partial large or small bowel resection with primary anastomosis. Alvimopan is registered under the Enterop Access Support and Education (E.A.S.E.) Risk Evaluation and Mitigation Strategy (REMS) program for continued monitoring to assure benefits outweigh the risks.

Objectives: To evaluate the adherence to formulary restricted guidelines and assess adherence to FDA REMS recommendations for alvimopan use at our hospital.
Methods: This study is a retrospective chart review from July 2014 to January 2016. Data collected for each patient include: demographics, laxative use, opioid use, adherence to multimodal accelerated pathway protocol, ordering physician, type of surgery, dose and frequency of alvimopan.

Results: An interim analysis of 15 patients was performed. Adherence to formulary restricted guideline was 100%. Preoperative doses were given to 93% of patients. Eight patients (53%) continued to receive alvimopan after first recorded bowel movement. Laparoscopic procedures were performed on 67% of patients. Median LOS was 7 days.

Conclusions: The results of this analysis will help guide education for service lines on the appropriate use of alvimopan at our institution. Further analysis is needed to assess the use of alvimopan at our hospital.

Disclosure(s): 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.

Evaluation of Compliance to Beta-Blocker Therapy for Prevention of Postoperative Atrial Fibrillation in Patients Undergoing Coronary Artery Bypass Graft (CABG) Surgery

David Ming Liu
Memorial Hermann Southwest Hospital, Houston, TX

Background: Postoperative atrial fibrillation (POAF) is a common complication of cardiac surgery associated with increased stroke risk, mortality, hospital length of stay, and costs. POAF occurs most frequently on postoperative days 2-4 and prophylactic use of beta-blockers reduce the incidence of POAF. Beta-blockers are most effective when started 24 hours postoperatively.

Objective: The purpose of this study is to assess compliance to the use of postoperative beta-blocker therapy for prophylaxis against POAF in patients undergoing CABG and to determine if premature discontinuation or withholding of beta-blocker therapy is a factor in the higher rate of POAF at Memorial Hermann Southwest.

Methods/Procedures: This is a retrospective chart review conducted at a 568-bed community hospital from June 2013 to June 2015. Data will be collected from patients who underwent CABG surgery with or without valve repair/replacement surgery who did not have chronic atrial fibrillation, bradycardia (heart rate less than 50 beats per minute), advanced heart block (second and third degree heart block), implantable heart defibrillator, or who were not taking class I and III antiarrhythmic drugs. All included patients will be reviewed for baseline characteristics, home beta-blockers, perioperative beta-blocker use, doses and reason why doses of beta-blockers were held, adverse effects of hypotension or bradycardia, and concomitant medications that could affect risk of POAF. The primary end point of this study is the compliance (defined as no missed doses postoperatively) of beta-blocker prophylactic therapy for up to 5 days post-procedure or discharge. The secondary endpoints include hospital and intensive care unit length of stay, in-hospital mortality, occurrence of cerebrovascular accident, and incidence of POAF.

Results: Research in progress

Conclusions: Research in progress

Disclosure(s): Authors have nothing to disclose.

Pharmacy-Compounded Diarrhea: The Effects of Enteral Nutrition and Sorbitol-Containing Medications

GA Martin, SL Aitken, TW Canada
The University of Texas MD Anderson Cancer Center, Houston, TX

Background: Diarrhea has multiple etiologies; however, one potential cause may be overlooked. Sorbitol is an excipient used to improve the palatability of oral liquid medications, but it can induce osmotic diarrhea.

Objective: To assess whether an increased number of sorbitol-containing medications administered to patients with feeding tubes receiving enteral nutrition (EN) was associated with diarrhea.
Methods: Adult patients admitted January-July 2015 receiving EN were included. *Clostridium difficile* tests served as surrogate markers for diarrhea. The number of sorbitol-containing medications (reported as median [interquartile range]) and results of *C. difficile* tests were assessed. The number of sorbitol-containing medications was compared between patients with and without *C. difficile* tests using the Wilcoxon Rank-Sum test.

Results: 49 patients met inclusion criteria. Sorbitol-containing medications were administered to 40 (82%) patients. 29 (59%) patients were tested for *C. difficile* with two initial positive results (7%). The 27 patients with negative *C. difficile* were tested a total of 60 times with one additional positive result. Patients tested for *C. difficile* received more sorbitol-containing medications (2 [1 – 3]) than those not tested (1 [1 – 2], \( p = 0.04 \)).

Conclusions: Patients who received sorbitol-containing medications were more likely to experience diarrhea and be tested for *C. difficile*. Limiting hidden sorbitol content in medications during EN may reduce diarrhea. Pharmacists should assess pharmacologic causes of diarrhea, including sorbitol-containing medications, for patients receiving medications through feeding tubes and recommend appropriate alternative formulations. This intervention could reduce *C. difficile* testing and complications from diarrhea.

Disclosures: GA Martin has nothing to disclose. SL Aitken has served on the advisory boards for Theravance and Actavis and on the speaker’s bureau for Merck. TW Canada has nothing to disclose.

The Implementation of Discharge Follow-up Phone Calls at a Comprehensive Cancer Center
S Patel, PA Nguyen, M Bachler, BJ Atkinson
The University of Texas MD Anderson Cancer Center, Houston, Texas

BACKGROUND: The Joint Commission identified medication reconciliation as a National Patient Safety Goal. Studies have shown that readmissions are avoidable through effective discharge planning and patient follow-up, but there is limited information on effectuating this process.

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

METHODS: Tools and resources (REDCap, Snagit, and motivational interviewing) were used for training development. Training included a pre-test, self-learning, instructional videos, posttest, and simulation. Patients discharged from the general internal medicine inpatient service beginning mid-October 2015 received a call within 72 hours. Secondary objectives include patient-related outcomes.

RESULTS: As of February 2016, 23 trainees (pharmacy students and outpatient pharmacists) were trained. The median pre- and post-test score was 6 and 9, out of 10. Currently, 206 calls have been completed; 150 patients (73%) were interviewed and 36 (17%) declined. Within 72 hours of discharge, 134 patients (89%) received their new medications and 87 (58%) had a discrepancy. The most common discrepancies were *drug not mentioned* (25%) and *incorrect frequency* (19%). Of 169 patients evaluated at 30 day post-discharge, 32 (19%) were readmitted and 42 (25%) returned to the emergency room.

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

DISCLOSURES: Shrina Patel has nothing to disclose. Phuoc A. Nguyen has nothing to disclose. Melissa Bachler has nothing to disclose. Bradley Atkinson has received a Foundation Research Grant through ASHP to pilot this program.
Evaluating the Use of Antibiotics in Patients with a Penicillin or Cephalosporin Allergy
Linda Paul, Kevin Purcell, Andre Andalcio, Armando Garcia

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

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

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

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

Disclosure: The author has nothing to disclose.

Non-Formulary Tolvaptan Medication use Evaluation at a Quaternary Academic Medical Center
AE Russell, RW Yau, M Moaddab
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: Acute onset of hyponatremia (serum sodium <130 mEq/L) is associated with a 60-fold increase in mortality. Hypervolemic/euvolemic hyponatremia is treated through free water restriction with concomitant loop diuretics, increased salt intake, or hypertonic saline. Tolvaptan is indicated for the treatment of hypervolemic and euvolemic hyponatremia resistant to correction with fluid restriction including patients with heart failure, cirrhosis and syndrome of inappropriate antidiuretic hormone.

Objectives: To evaluate the efficacy, safety and appropriateness of tolvaptan as well as develop a guideline for the use of tolvaptan and management of hyponatremia at our hospital.

Method(s): A retrospective chart review of patients receiving tolvaptan from January 1, 2010 through December 31, 2015 was performed. Data collected include gender, age, weight, height, pertinent past medical history, change in level of care, serum potassium levels >5 mEq/L, hypotension (<90/60 mmHg), serum sodium levels, mortality, alternative hyponatremia therapies used, prescribing physician’s service line, causative agents for hyponatremia, indication for therapy, dose, and frequency. Criteria for appropriate and inappropriate use were defined.

Result(s): One hundred forty-five patients out of 150 were included in the study. Sixty-four (44%) patients have been analyzed resulting in 126 orders and 159 administered doses. The mean change in serum sodium from tolvaptan initiation to discontinuation was 8 ± 6 mEq/L. The majority (65%, n=64) of orders met inappropriately use criteria.

Conclusion(s): Preliminary findings demonstrate patients receiving tolvaptan had a net increase in serum sodium levels; however, the majority of orders did not meet appropriate use criteria. Further data collection is necessary.

Disclosure(s): 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.
Medication Use Evaluation of Dexmedetomidine at a Large, Academic Medical Center
MM Sabawi, S Michaud, K Putney, G Laine
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: Dexmedetomidine is an alpha2-receptor agonist indicated for intensive care unit sedation in mechanically ventilated patients and for procedural sedation. At Baylor St. Luke’s Medical Center (BSLMC), dexmedetomidine is a restricted formulary medication and is approved for certain patient populations. It is important to categorize how it is used in order to assess appropriate use from a patient safety and efficacy standpoint.

Objective(s): To evaluate the utilization of dexmedetomidine at BSLMC including the prescribing patterns, efficacy, and safety monitoring.

Methods: This is a single-center, retrospective, observational review of patients who were admitted to BSLMC during January and February of 2016 and received dexmedetomidine for any reason. For each patient, information was obtained from the patient’s medical record including demographic information, indication for therapy, dose, monitoring parameters, and adverse effects.

Results and Conclusion(s): An interim analysis of 20 patients was performed. The most common use of dexmedetomidine was as a transition from another sedative (70%). Other uses include using it as the front-line sedative (15%), intra-procedural sedation (10%), and post-procedural sedation (5%). The median time to extubation after initiation of infusion was 54 hours (IQR 15.3-72.5 hours). The most common adverse effect was hypotension (60%), followed by hypertension (40%), tachycardia (25%), and bradycardia (20%). Two of fourteen patients (14.3%) being transitioned from another sedative were prescribed atypical antibiotics.

Disclosures: MM Sabawi, S Michaud, K Putney, G Laine 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.

Establishing Key Antibiotic Utilization Metrics for an Antimicrobial Stewardship Dashboard
JM Serna, S Patel, PJ Romeril
Memorial Hermann Southwest Hospital, Houston, Texas

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

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

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

Results: Preliminary metrics that have been successfully incorporated into the ASP dashboard include antibiotic spectrum use, DOT, and LOT. Quality indicators that have been incorporated include rates of Methicillin-Resistant Staphylococcus.
aureus (MRSA), Extended-spectrum Beta Lactamases (ESBLs), Vancomycin-resistant Enterococci (VRE), and incidents of Clostridium difficile.

Conclusion: Pending completion of ASP dashboard.

Disclosures: Authors have nothing to disclose.

Extracorporeal Membrane Oxygenation (ECMO) Therapy: Drug Dosing Considerations
AJ Sinkov, CT Nguyen, KM Cox, S Kearns
Baylor Scott & White All Saints Medical Center – Fort Worth, Fort Worth, TX

Background – ECMO is utilized throughout Baylor Scott & White Health (BSWH) as life support technology to keep patients with non-functional hearts and/or lungs alive. Drug dosing differs in ECMO patients due to altered pharmacokinetic/pharmacodynamic (PK/PD) parameters and adsorption through the circuit.

Objectives – The presentation will explore the clinical controversy of anticoagulation in ECMO, discuss the impact of ECMO on PK/PD, and provide recommendations for drug dosing based on the current literature.

Methods – A continuing education presentation for pharmacists in BSWH will be presented in May 2016. The presentation focuses on educating pharmacists on indications for ECMO, the clinical controversy of anticoagulation in ECMO patients, recommendations for drug dosing based on PK/PD parameter changes, and ongoing studies in drug dosing.

Results – Pharmacists have given positive feedback on the utility of its content.

Conclusions – ECMO is a life-saving technology that keeps patients with non-functional heart and lungs alive. The most commonly used anticoagulant is heparin, and levels are most accurately measured using aPTT (activated partial thromboplastin time) or anti-Xa. ECMO increases volume of distribution and clearance, depletes plasma proteins, and sequesters drug in the circuit. There are currently no formal guidelines to provide drug dosing recommendations, and PK/PD data should be used to guide pharmacists in drug dosing.

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

Comparison of a Multi-Modal Blood Glucose Control Plan in Diabetic Open Vascular Surgery Patients
Thibeaux M, Narayanan M, Higgins Clowney J, Presutti E, Mauro S
Memorial Hermann Southwest Hospital, Houston, TX

BACKGROUND: Hyperglycemia in diabetic vascular surgery patients is associated with increased hospital stay, infection, morbidity and mortality. However, very tight glycemic control results in increased hypoglycemia and increased mortality. Current guidelines recommend a blood glucose goal less than 180 mg/dL in hospitalized patients to decrease hyperglycemic complications without causing severe hypoglycemic events.

OBJECTIVES: To compare the efficacy and safety of a multi-modal blood glucose control plan before and after initiation in diabetic open-vascular surgery patients from admission to discharge.

METHODS: This is a retrospective chart review conducted at a 568 bed community hospital from July 2013 to July 2015. Data was collected one year before (July 2013 to July 2014) and one year after (July 2014 to July 2015) the initiation of a multi-modal blood glucose control plan. The multi-modal blood glucose control plan was designed to achieve blood glucose levels less than 180 mg/dL in diabetics during the preoperative, intraoperative, and postoperative stages of open vascular surgery. Inclusion criteria consists of patients who are not pregnant, aged 18 years or older, undergoing open vascular surgery, and have documented diabetes or A1C greater than or equal to 6.5 percent at admission. All included patient charts will be reviewed for baseline characteristics, clinical outcomes, and hyperglycemic and hypoglycemic events at each stage of the multi-modal blood glucose control plan. The primary endpoint of this study is the hyperglycemic rate based on documented blood glucose greater than or equal to 180 mg/dL. The secondary endpoints include hospital mortality from any cause, length of hospital stay, hypoglycemic rates, and hospital surgical site infection rates.
Evaluation of Modified del Nido versus Buckberg Solution for Cardioplegia During Isolated Aortic Valve Replacement Surgery
K Welch, C Ike, A Martin, B Florczykowski, T Trpkosh, N Doolabh
Trinity Mother Frances Hospital and Clinics, Tyler, Texas

Background: Various cardioplegia solutions are used to arrest the heart during cardiac surgeries.

Objective: The objective of this study is to evaluate the difference in outcomes associated with modified del Nido versus Buckberg cardioplegia solution in isolated aortic valve surgery.

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

Results: One hundred patients were included in analysis with 50 patients in each group. Median cross-clamp time was 7 minutes less in the del Nido versus Buckberg group (61.5 vs. 68.5, p=0.011). Median cardiopulmonary bypass time (101.5 vs. 114.0 minutes, p=0.009) and operating room time (218.0 vs. 236.0 minutes, p=0.007) were also less in the del Nido group. Median intra-operative peak glucose (146 vs. 175 mg/dL, p=0.007) and post-operative glucose (171 vs. 204 mg/dL, p<0.001) also favored the del Nido group. Significantly fewer patients in the del Nido group required intra-operative blood transfusion (10 vs. 22, p=0.018).

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

Disclosure: All authors have nothing to disclose.

Evaluation of apixaban and associated outcomes in dialysis patients at a large academic medical center
NQ Dau, M Salazar, M Alam, M Bayat
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: In January 2014, the Food and Drug Administration approved a labeling change for apixaban to include patients on dialysis. Per this labeling change, no dose adjustment is required for patients with renal impairment including those with end-stage renal disease (ESRD) on hemodialysis. However, dose adjustment is recommended in nonvalvular atrial fibrillation patients who meet the criteria for dose adjustment. The dosing recommendations are based on pharmacokinetic and pharmacodynamic data in 8 subjects on dialysis. Thus, the safety of apixaban in dialysis is unknown.

Objectives: To evaluate the use of apixaban in patients on dialysis and examine associated outcomes.

Method(s) or Procedure(s): This is a single-center, retrospective, observational chart review of dialysis patients on apixaban admitted to our institution. The primary endpoint was admission or readmission due to a composite of minor or major bleeding, systemic embolism, or stroke at anytime while on apixaban and dialysis. The secondary endpoints were documented occurrence of major bleeding, minor bleeding, venous thromboembolism (VTE), stroke, and all-cause mortality.
Result(s): An interim analysis of 12 patients was performed. Four dialysis dependent patients (33.3%) were admitted for a minor or major bleeding event. One patient (8.3%) was admitted with gastrointestinal bleeding requiring blood transfusion. There were no admissions or re-admissions due to VTE or stroke. There was one death (8.3%) attributed to acute congestive heart failure.

Conclusion(s): Four out of 12 patients who received apixaban while on chronic hemodialysis were admitted due to bleeding. All were receiving appropriately reduced dose of apixaban 2.5 mg twice daily.

Disclosure(s): 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.

Resident-Fellow-PGY2 Category

Outcomes after Implementing a Pharmacist-Led Post Hospitalization Discharge Heart Failure Clinic at a County Hospital
MS Belisle, EE Moss, AP Rahman, JN McNulty, KS Alvarez, SR Das
Parkland Health & Hospital System, Dallas, TX

Background: Parkland Health & Hospital System has incorporated a transitional care unit (TCU) process with the goal of identifying heart failure (HF) patients at highest risk of readmissions and performing an intensive bundle of coordinated inpatient/outpatient tasks to prevent readmissions. Due to limitation of resources, many HF patients are not enrolled in the TCU process and remain a high risk of being readmitted. It is proposed that the non-TCU HF patients would benefit greatly from drug therapy management by a pharmacist in both managing HF and reducing HF readmission rates.

Objective: To assess the impact of pharmacist interventions on the reduction of 30-day all cause readmission rates for patients enrolled in a pharmacist-led HF clinic.

Methods: A single-center, retrospective study was conducted from August 2015 to February 2016. Patients who are at least 18 years old and who had an index admission of acute exacerbation of HF were included in the study. The intervention group includes patients who were enrolled and showed to initial HF clinic appointment compared to the control group which includes patients who were enrolled, but did not show to the initial HF clinic appointment. The primary outcome is to assess the rate of 30-day all cause readmissions in patients between the intervention and control groups.

Results: A total of forty-two patients were enrolled in the study, with 62% (n=26) of the patients showing up to the initial HF clinic appointment. The demographics were similar between the two groups. The all cause 30-day readmission rates were significantly lower in the intervention group compared to the control group (7.7% vs. 56.3%, p=0.001, respectively). There have been a total of 226 interventions during the 61 clinic visits thus far. The most common interventions are medication-specific changes, patient education, and clinic referrals.

Conclusion: In a patient population with challenging medical and socioeconomic issues, a reduction in all-cause readmission rates was achieved through a pharmacist-led post hospitalization discharge HF clinic service.

Disclosures: None

Evaluation of Parenteral Nutrition Protein Provision in a Critically Ill Patient Population at a Large, Quaternary Academic Medical Center
Q Broussard, A Tucker, G Laine
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: Protein is a macronutrient important for wound healing, supporting immune function, and maintaining lean body mass. The Society of Critical Care Medicine (SCCM) and American Society of Parenteral and Enteral Nutrition (A.S.P.E.N.) recently released the 2016 Guidelines for the Provision and Assessment of Nutrition Support in the Critically Ill Patient advocating for adequate protein provision of 1.2 – 2 grams/kilogram/day (g/kg/d), with some populations needing up to 2.5 g/kg/d.
Objectives: The primary objective of this study is to determine if adequate protein provision is met by patients receiving parenteral nutrition (PN) in the intensive care unit. Secondary objectives include determining if adequate protein provision is met by renal replacement therapy (RRT) and end stage liver disease (ESLD) patients in the intensive care unit.

Method(s) or Procedure(s): This is a single-center, retrospective study performed in critically ill patients receiving PN admitted to and discharged between January 2014 – December 2015.

Result(s): For 1,153 PN bags meeting inclusion criteria, average protein provision was $1.40 \pm 0.42$ g/kg/d, with 58.2% of PN bags containing 1.2 – 2 g/kg/d protein and 31.2% of PN bags not meeting minimum adequate protein provision. Of PN bags with concomitant RRT and ESLD, 75.9% and 75.2% respectively met adequate protein provision.

Conclusion(s): Almost one-third of PN bags overall did not meet the minimum requirement for adequate protein provision while a majority of RRT and ESLD PN bags did meet adequate protein provision. Future education of PN prescribers as well as pharmacists may be beneficial to ensure adequate protein provision which may reduce morbidity and mortality.

Disclosure(s): Q Broussard, A Tucker, and G Laine have nothing to disclose.

Nephrotoxicity Rates in Patients Receiving Vancomycin and Piperacillin-Tazobactam Compared to Vancomycin and Cefepime

G Fong, K Phe, HR Russo
CHI St. Luke’s Health – Baylor St. Luke’s Medical Center, Houston, Texas

Background: Vancomycin and piperacillin-tazobactam are both first-line antibiotics per Infectious Diseases Society of America guidelines. Nephrotoxicity has been described with both agents through differing mechanisms. Recent evidence suggests there may be increased risk of nephrotoxicity with the combination of vancomycin and piperacillin-tazobactam compared to vancomycin alone or in combination with cefepime.

Objective(s): The primary objective of this study is to confirm previously established rates of nephrotoxicity with vancomycin and piperacillin-tazobactam compared to vancomycin and cefepime using RIFLE criteria. The secondary objective is to identify risk factors associated with increased nephrotoxicity risk in this population.

Method(s): This is a single-center, retrospective cohort study of hospitalized patients at an 850-bed quaternary care academic medical center in Houston, TX. Patients receiving a combination of either vancomycin and piperacillin-tazobactam or vancomycin and cefepime in 2015 were included.

Preliminary Result(s): Currently, 110 patients have been included and evaluated. Preliminary analysis reveals similar baseline characteristics between the groups, including renal function. Nephrotoxicity rates as defined by RIFLE criteria were no different between vancomycin and piperacillin-tazobactam vs. vancomycin and cefepime (25.0% vs. 18.5%, p=0.49). Trough were obtained more frequently in the piperacillin-tazobactam group (89.3% vs. 72.2%, p=0.03), but the proportion of troughs above 20 mcg/mL were the same between the two (36.0% vs. 35.9%, p=1.00).

Preliminary Conclusion(s): In this population, nephrotoxicity rates were not significantly different between patients receiving piperacillin-tazobactam and vancomycin compared to vancomycin and cefepime. Inclusion of more patients may identify a significant difference between the two groups as well as risk factors for nephrotoxicity.

Disclosure(s): G Fong, K Phe and HR Russo have nothing to disclose.

Determine the Impact of Preventing Fluid Accumulation in a Community Hospital ICU (DRI-ICU)

Jessica L. Garza, Chris Tawwater, Jennifer Grelle
Texas Tech University Health Science Center, School of Pharmacy, Abilene, Texas

Background: “Fluid creep” has been shown to increase morbidity and mortality in several studies of patients with burn injuries, severe sepsis, acute respiratory distress syndrome, and acute kidney injury. Fluid creep is the continued
administration of fluids (maintenance IV fluids, vasopressors, IV antibiotics, and nutrition) after an initial resuscitation in patients with adequate volume status.

Methods: Adults admitted to the ICU that required mechanical ventilation for at least 48 hours between May 1, 2013 and June 30, 2015 were identified and included in the study if they met inclusion and exclusion criteria. Data collection consists of patient demographics, daily weights, fluid balance, clinical and safety outcomes such as ICU, and hospital length of stay, acute kidney injury and new onset shock.

Results: ICU length of stay was an average of 8 days for subjects that gained less than 10% of their body weight compared to 12 days for patients that gained greater than or equal to 10% body weight in the unadjusted analysis (P<0.0001). This study showed significantly shorter hospital length of stay (P=0.002) and duration of invasive mechanical ventilation (P<0.007) for those subjects that gained less than 10% of their initial body weight compared to those that gained more.

Conclusions: A large portion of patients were ventilated secondary to pneumonia and these patients had the highest incidence of fluid creep. There was a positive relationship between fluid status and ICU, hospital length of stay, and time on mechanical ventilation.

Disclosure: Jessica Garza, Chris Tawwater, and Jennifer Grelle have nothing to disclose.

Evaluation of the utilization of calcitonin-salmon injection at a large, quaternary, academic medical center
BA Hamilton, M Salazar, KS Putney
CHI St. Luke’s Health Baylor St. Luke’s Medical Center

Background: Calcitonin-salmon injection is a synthetic polypeptide of 32 amino acids sequenced identically to calcitonin of salmon origin. It is a calcitonin receptor agonist acting primarily on bone to decrease resorption rate and is given subcutaneously or intramuscularly. It is FDA approved for symptomatic Paget’s Disease of the bone, hypercalcemia, and postmenopausal osteoporosis (> 5 years after menopause). The cost of calcitonin-salmon injection has increased ten-fold, and the study institution, an 850-bed quaternary teaching hospital, has no utilization restrictions. The price increase has necessitated the evaluation and optimization of utilization.

Objectives: The purpose of this study is to evaluate calcitonin-salmon injection utilization for appropriateness and identify opportunities to improve cost-effectiveness.

Methods: A retrospective cohort observational study of adult hospitalized patients who received calcitonin-salmon injection from 11/1/2013 – 10/31/2015 was performed. Utilization was evaluated for appropriateness based on published indications and dosing guidelines. Collected data included patient age, weight, indication, prescriber, dose, duration of therapy, total doses, previous and/or concurrent therapies, and total and/or corrected and/or ionized calcium for patients with hypercalcemia.

Results: Of 70 patients evaluated, 91.43% (n=64) were treated for hypercalcemia, 81.25% (n=52) with severe or symptomatic hypercalcemia. These patients received an average of 6 units/Kg/day and an average of six days of therapy. Approximately half of patients received no alternative or escalating therapy.

Conclusion: The majority of calcitonin-salmon injection utilization is for an appropriate indication of severe or symptomatic hypercalcemia. However, utilization of alternative therapies was limited, and duration of therapy was often excessive. Therefore, the institution is proceeding with methods to optimize utilization.

The Impact of using Various Treatment Methods in the Management of Resistant Hypertension on Blood Pressure Control and Medication Adherence
OP Iwuorie1, E Moss1, W Vongpatanasin2, S Das2
Parkland Health & Hospital System, Department of Pharmacy, Dallas, Texas1
University of Texas Southwestern Medical Center, Dallas, Texas 2

Background: Physician-pharmacist collaborative model (PPCM) is a treatment method that has demonstrated blood
pressure (BP) lowering effects in patients with Resistant Hypertension (RH). PPCM alone has yet to show improvements in impacting patient medication adherence. Therapeutic drug monitoring (TDM), a proven approach to detecting medication adherence, in addition to PPCM has not been studied in optimizing BP control and medication adherence in RH patients.

Objective: To examine the extent to which TDM-guided feedback plus PPCM (TDM-PPCM) can impact blood pressure control and medication adherence compared to PPCM alone amongst patients with RH.

Methods: A single-center, retrospective study examining RH patients seen in a Hypertension Clinic from August 2015 to February 2016. Patients evaluated under the PPCM and met established criteria for TDM consideration were followed prospectively after TDM was collected. The primary outcome was to assess the change in systolic blood pressure (SBP) and diastolic blood pressure (DBP) between PPCM alone versus TDM-PPCM in patients with RH.

Results: Thirty-nine patients were seen in a Hypertension Clinic, of which ten were RH patients. An average change of 30 mmHg and 8.8 mmHg in SBP and DBP respectively was seen with the PPCM alone group whereas there was an average change of 25 mmHg and 5.5 mmHg in SBP and DBP respectively in patients that were managed with TDM-PPCM.

Conclusion: The results reveal reductions in blood pressure and improved medication adherence with PPCM alone compared to the TDM-PPCM. Results suggest that TDM-guided feedback can positively impact blood pressure control and medication adherence in patients with RH.

Disclosures: None

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

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

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

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

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

GAP ANALYSIS OF UNITED STATES PHARMACOPEIA (USP) CHAPTER 800 AT AN INTEGRATED HEALTH CARE SYSTEM
SP Schultz, CA Berge , EO Unachukwu, EG Omorodion
Parkland Hospital & Health System, Dallas, TX.

BACKGROUND: As a part of its commitment to providing public standards for quality, consistency, purity, identity, and strength of all medicines, USP has developed standards for compounding. USP <800>, which concerns hazardous drugs and
their handling in healthcare settings, was developed to build upon the standards established by USP <797> and <795>. The purpose is to provide containment of hazardous drugs (HD) to as low a limit as reasonably achievable (ALARA) and to provide compounding techniques in proper engineering controls.

OBJECTIVE: Complete a gap analysis comparing current procedures, policies, and equipment utilized at Parkland Health and Hospital System to the new standards found within USP <800>.

METHODS: The analysis was performed through a line-by-line review of USP <800>. Each line of the USP <800> was added into a spreadsheet to be evaluated by categorical teams. The four categorical teams were: procurement and storage, preparation and compounding, staff training and medical surveillance, and delivery, administration, and disposal.

RESULTS: Results suggest that the largest number of gaps is located in the staff training and medical surveillance category. This category also has the lowest percentage of category completion at 24%.

CONCLUSION: The training and medical surveillance category needs the most attention, followed by the delivery, administration, and disposal category. This is consistent with our initial assumptions because we do not have preexisting medical surveillance program. The other main takeaway from this analysis is that the procurement and storage category needs to meet immediately to prepare for the 2017 budget.

DISCLOSURE: The author has nothing to disclose.

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

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

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

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

Implementation of Point of View Cameras in Controlled Substance Reconciliation in a County Health-System
J Wyche, L Nicholls-Williams, V Johnson, C Berge, J Gard
Parkland Health & Hospital System, Dallas, Texas

Background: Controlled substances accessed in the automatic dispensing cabinet (ADC) by a licensed nurse require a witness of all removals & wastage. All unused controlled substances accessed from the ADC must be returned to the ADC return bin using the return medication function. Two pharmacy technicians are responsible for reconciliation of the return bins Monday thru Friday. All intact controlled substance medications will be refilled into the ADC machine. Each delivery run to the medication room takes approximately 10 to 15 minutes to complete ADC returns, deliveries, IV returns, reconcile shingle sheets and remove expired medications in the nurse control drawer and the ADC. Since it is difficult to have a nurse leave her duties to witness the technician emptying the return bin, the two pharmacy technicians would have to go together to each medication room to witness one another. Overall, this would take about 5-6 hours out of an 8 hour shift to accomplish.

Results: Improved efficiency in controlled substance reconciliation with old process and enhanced process. Nursing hours per year to witness was 2,500 hours old process and 0 hours enhanced process. Pharmacy technician hours per year for delivery runs 1,440 hours old process and 600 hours enhanced process.

Conclusion: Implementation of point of view cameras in a county health-system has led to increased efficiency by nursing and pharmacy technicians, improved satisfaction with enhanced process, and improved ability to address diversion potential.

Disclosures: Authors of the presentation have nothing to disclose.

Assessment of oral antiplatelet prescribing patterns in acute coronary syndromes at a large, quaternary, academic medical center
EB Yin, M Alam, M Bayat
CHI St. Luke’s Health Baylor St. Luke’s Medical Center, Houston, Texas

Background: Since the introduction of the more potent ADP (adenosine diphosphate) receptor antagonists, prescribing patterns of these agents in routine practice for patients presenting with ACS (acute coronary syndromes) has not been fully characterized.

Objectives: To evaluate ADP receptor antagonist prescribing patterns in ACS to determine the percentage of appropriate use according to FDA approved labeling and to determine percent utilization.

Methods: A single-center, retrospective observational study conducted to compare patients who were treated with an ADP receptor antagonist for a primary diagnosis of new onset ACS between January 2014 and December 2014.

Results: A total of 275 patients were identified. Clopidogrel was the most commonly prescribed ADP receptor antagonist (52%) followed by ticagrelor (26%) and prasugrel (22%). Patients who were prescribed clopidogrel were more likely female (P < 0.01), ≥ 75 years (P < 0.01), ≤ 60 kg (P = 0.02), and had more co-morbidities (P ≤ 0.05). Hospital length of stay was
slightly higher in patients prescribed clopidogrel (P < 0.01); however, there was no difference in all-cause mortality or 30-day readmission rates. Of the patients on clopidogrel prior to admission, 21% were switched to prasugrel or ticagrelor. Of the patients on ticagrelor or prasugrel prior to admission, 17% were switched to clopidogrel. Clopidogrel was prescribed inappropriately 11% of the time, prasugrel 11% of the time, and ticagrelor 4% of the time (P = 0.22).

Conclusion: Clopidogrel continues to be the most commonly prescribed antiplatelet agent particularly in older patients with more co-morbidities.

Disclosure: The authors have nothing to disclose.

Optimizing Therapy: Pharmacist Involvement Versus Usual Care in a Heart Failure Population
QL Zeng, K Rascati, K Sucic, L Vasquez, JR Jokerst
University of Texas at Austin and CommUnityCare Clinics

Background: The beneficial effect of pharmacist involvement in the management of heart failure (HF) has been demonstrated in multiple studies. In these previous studies, management of the heart failure is the main disease state of focus for the pharmacists.

Objectives: The following study is designed to describe the optimization and adherence of HF medications in patients who are referred to a pharmacist for management of other chronic diseases compared to patients who receive usual care with their physicians only.

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

Results: In progress.

Conclusion: In progress.

Disclosure: The authors have nothing to disclose.

Student Category

Integrating Student Pharmacists into a Residential Recovery Center
LJ Azali, HV Patel, B Watzak
Texas A&M University College of Pharmacy, Kingsville, Texas

Background: Illicit drug addiction and prescription drug abuse are serious threats to the community. In regards to
medication knowledge, pharmacists are the most trusted health care professionals in the society. Pharmacists can prevent addiction and its harmful outcomes by using unique skills, training, and experience to educate their patients. Familiarizing students and pharmacists to drug addiction and abuse will increase treatment options and prevention strategies to patients.

Objective(s): To increase the awareness of the rise in substance abuse disorders in the community and within the pharmacy profession. To develop a P4 APPE rotation in order for students to gain experience in recovery centers in order to understand and treat addiction.

Method(s): Student pharmacists will work closely with other healthcare professionals in residential recovery centers to observe sign and symptoms of drug addiction, evaluate drug therapy, and educate patients regarding 12 step therapy and drug abuse prevention.

Result(s): Not applicable.

Conclusion: Drug addiction is an increasing problem that affects various groups of people. The effects that it can have on an individual's life, both work related and personal, can be detrimental. Residential recovery programs are an essential aspect of a community for treatment of patients with a substance abuse disorder. In the community setting, pharmacists with background training in identifying addiction could decrease the incidence of addiction in the community.

Disclosure(s): Not applicable

Intravenous Lipid Emulsion Therapy in Calcium Channel Blocker Toxicities Outcomes of therapy: A Review of Case Reports and Case Series
SB Bhakta
University of Houston College of Pharmacy, Houston, TX

Background: Calcium channel blockers accounted for nearly 25% of deaths attributed to cardiovascular agent exposures reported in the 2014 Annual Report of the American Association of Poison Control Centers. The traditional management of calcium channel blocker toxicities provides no targeted antidotal therapies, as many are supportive in nature.

Objectives: The objective of this review is to examine the outcomes of therapy with intravenous lipid emulsion therapy in the treatment of calcium channel blocker toxicity.

Method(s): A systematic review of published case reports and case series involving the use of intravenous lipid emulsion in the treatment of calcium channel blocker toxicities in humans was conducted. PubMed and SCOPUS databases were searched with the following keywords: “intravenous lipid emulsion” “calcium channel blocker toxicity” “calcium channel blocker overdose” “lipid rescue” “dihydropyridine” “non dihydropyridine” “fat emulsion”. Inclusion criteria consisted of human case reports and case series published in peer-reviewed journals. Exclusion criteria consisted of meeting abstracts, multidrug toxicities, and non-English reports.

Result(s): 7 articles met the inclusion and exclusion criteria. Outcomes measured included, mortality, duration of hospitalization, adverse effects of lipid emulsion therapy, hemodynamic response to lipid emulsion therapy, and effect on vasopressor and insulin requirements. 1 patient (7.7%) died secondary to withdrawal of care, hospitalization duration was an average of 7±3.4 days, 3 cases (23.0%) reported adverse effects of lipid emulsion therapy. A positive hemodynamic response after initial lipid emulsion therapy was observed in 11 cases (84.6%). The effect on vasopressors was reported in 5 (38.5%) cases, all of which demonstrated a decrease in vasopressor and/or insulin requirements.

Conclusion(s): The results support use of lipid emulsion therapy in calcium channel blocker toxicities after exhaustion of traditional management strategies and hyperinsulinemia euglycemia therapy.

Disclosure(s): SB Bhakta has nothing to disclose.
**Six Sigma Approach to Inpatient Pharmacy Medication Waste Reduction**
Jean Campbell1,2, Pharm.D. Candidate 2016, Cary Mathews1, Pharm.D., Will Edmiston1, Pharm.D., Aaron Gilbreath1, CPhT, Michelle Smith1, CPhT, and Young Lee1,2, Pharm.D., BCPS, BCCP
Hendrick Medical Center1 and Texas Tech University Health Science Center – School of Pharmacy2 of Abilene, TX

In 2016, the Hendrick Medical Center established an Ad-Hoc Pharmacy Team to implement Six Sigma Interventions designed to reduce unit medication waste in its 500 bed hospital without negatively impacting the health outcomes of any its patients. The team consisted of five Pharmacy Department staff members: one Clinical Informaticist, one Pharmacist, two Lead Technicians, and one Pharm.D. Candidate from Texas Tech University Health Science Center – School of Pharmacy. Its first intervention was executed on January 28, 2016 and exhibited promising results. Intervention #1 showed a statistically significant increase in unit medication returns to the Central Pharmacy and a trend of reduced unit medication waste. A second intervention was performed on March 18, 2016, and its results are not available at present. Due to the early success of her Ad-Hoc Pharmacy Team, the Pharmacy Director has decided to continue their Six Sigma Interventions throughout the balance of 2016.

**The Need for Board Certified Pharmacy Specialists**
MA Cruz, MT Le, C Wang, CA Zavala
Texas A&M University Rangel College of Pharmacy, Kingsville, TX

Background: Pharmacy specialists are needed to provide direct patient care to groups of patients in need of specialty care. Pharmacists without specialty training cannot provide the same effective or efficient standard of care. There are currently eight specialty practice areas recognized by the Board of Pharmacy Specialties.

Objectives: To determine whether pharmacists who receive board certification, including specialty training, will be competitive in future job opportunities.

Methods: The number of PGY1 and PGY2 residencies offered in the past 5 years will be compared to the residencies of the type recognized by Board of Pharmacy Specialties as clinical specialties. The growth and need of board certified pharmacy specialists will be investigated.

Results: There have been overall significant increases in the number of PGY1 and PGY2 residencies, as well as the number of board certified pharmacy specialists.

Conclusions: Specialization is becoming increasingly important as it is considered the gold standard when determining a pharmacist’s qualifications and capabilities within their specialty field. Board certified pharmacy specialists are found to be experts in their fields. They are the most qualified to manage complex drug therapies. Therefore, they are highly sought for their knowledge, experience, skills, and expertise.

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

**Bridging the Gap between Inpatient and Outpatient Care: Implementation of a Community Pharmacy Discharge Prescription Delivery Program to Hospital Systems**
SI Cruz, HV Patel, Dr.Anna Brozick
Texas A&M University College of Pharmacy, Kingsville, Texas

Background: According to the Institute of Medicine, there is currently a gap between inpatient and outpatient transitions of care leading to increased hospital readmission rates. Previous studies have shown that medication related adverse effects continue to be one of the top reasons for hospital readmission. As a result, pharmacists have the opportunity to significantly impact the health care system by helping to provide medication discharge counseling to ultimately help reduce hospital readmission rates. However, pharmacist-led discharge counseling is not currently implemented in every hospital and is limited in participating hospitals. This project proposes an innovative approach to implementing and strengthening pharmacists-led discharge counseling services by using a model which calls for joint efforts between community and hospital pharmacists.
Objective: Establishment of a partnership between community and hospital pharmacies to evaluate the impact of pharmacist led medication discharge counseling.

Methods: Community and hospital systems work closely following a model that allows for implementation of a community discharge counseling delivery program in the hospital setting.

Results: Not applicable.

Conclusion: Center for Medicare and Medicaid Services recognizes readmission to hospitals as a critical factor in defining hospital success and star ratings. Expanding patient discharge counseling programs is a way to help many hospitals reduce admission rates. Establishing a discharge delivery program between a hospital system and community pharmacy can help reduce healthcare costs, all while expanding role of hospital and community pharmacists.

Disclosure: No disclosures.

**Impact of Empiric Piperacillin/Tazobactam Use on Nephrotoxicity in Patients with Gram-negative Bacteremia**

F Dehmami, E Yoo, C Alvarez, A Faust, RG Hall
Texas Tech University Health Sciences Center, School of Pharmacy
Hospital of the University of Pennsylvania
Texas Health Medical Center

Background: Piperacillin/tazobactam has been associated with nephrotoxicity in patients receiving vancomycin. However, its impact on nephrotoxicity in patients with gram-negative bacteremia is unclear.

Objective: To evaluate the impact of empiric piperacillin/tazobactam on nephrotoxicity in patients with gram-negative bacteremia.

Methods: This retrospective cohort included patients ≥18 years of age who received ≥48 hours of empiric therapy for bacteremia due to *Escherichia coli*, *Pseudomonas aeruginosa*, *Enterobacter sp.*, *Klebsiella sp.*, *Acinetobacter sp.*, or *Stenotrophomonas maltophilia* from 1/1/2008 to 8/31/2011. Patients with polymicrobial infections, mixed infections, or recurrent bacteremia were excluded. Nephrotoxicity was an increase of ≥0.5 mg/dL or ≥50% increase from baseline for ≥2 consecutive days. A multivariable logistic regression was performed on variables identified through the univariable analysis (p<0.1) as well as biologically reasonable causes of nephrotoxicity.

Results: Overall, 321 patients were included. The mean age of the cohort was 72 years (71% were ≥65 years old), with 37% having a cancer diagnosis and 23% residing in the ICU when their gram-negative bacteremia was identified. Nephrotoxicity was not higher in patients receiving empiric piperacillin/tazobactam compared to other antimicrobials (13 vs. 15%, p=0.64). Four factors were associated with nephrotoxicity in the univariable analysis. In the multivariable analysis, baseline serum creatinine >2.0 mg/dL (Odds Ratio [OR] 2.58; 95% Confidence Interval [95%CI] 1.29-.5.17) and vasopressor use (OR 5.16; 95%CI 2.52-10.56) were independently associated with nephrotoxicity. Empiric piperacillin/tazobactam therapy was not associated with nephrotoxicity in the univariable (OR 0.85, 95%CI 0.43-1.68) or multivariable (OR 0.72, 95%CI 0.34-1.52) analysis.

Conclusion: Empiric piperacillin/tazobactam was not associated with nephrotoxicity.

Disclosures: Authors of this presentation have the following 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: FD, EY, CA, AF: Nothing to disclose; RGH: Genetech (Advisory board)
Acid Suppressive Therapy for Stress Ulcer Prophylaxis in Non-Critically Ill Patients

CJ Henson, MT Hong
Texas Tech University Health Sciences Center School of Pharmacy, Dallas, Texas
Medical Center Hospital, Odessa, Texas

Background: Acid suppressive therapy (AST) for stress ulcer prophylaxis (SUP) has been shown to significantly reduce the incidence of upper gastrointestinal (GI) bleeding in hospitalized patients in the intensive care unit (ICU) and non-ICU settings. The current literature discourages the use of SUP for non-critically ill patients. Several studies have determined that the majority of patients in general medical wards and ICUs were prescribed AST, despite only a small portion of them having a high-risk for a stress ulcer related gastrointestinal bleed (SURGIB). The SURGIB risk score helps practitioners stratify the risk of stress ulcer related bleeding in non-critically ill patients and appropriately prescribe them AST.

Objectives: To determine the percentage of non-critically ill patients at a community teaching hospital who were appropriately prescribed AST during their hospital stay and inappropriately discharged with AST.

Methods: We retrospectively reviewed the charts of randomly selected patients who were administered AST on medical floors during the month of May 2015 and calculated their SURGIB risk scores to determine if they were appropriately prescribed AST.

Results: Out of 141 patients, only thirteen (9.2%) patients were categorized as medium-high risk (> 9 points), and nine patients (6.4%) were discharged inappropriately on AST.

Conclusions: The majority of the patients in this study were categorized as low risk (less than 10), and these 128 patients (90.7%) were inappropriately given AST for SUP. Only 6.4% of patients were inappropriately discharged with AST compared to about 30% from prior trials. By using this scoring system, pharmacists and physicians can decrease AST use in non-ICU settings by up to about 90%.

Disclosure: The authors have no relevant conflicts of interest to disclose.

Effect of Glucose, Sodium Chloride, and Ascorbic Acid Concentrations on Glycation and Aggregation of Bovine Serum Albumin

P Huang, C Franklin, A Coker
University of the Incarnate Word Feik School of Pharmacy, San Antonio, TX. 78209

Background: Ascorbic acid is an anti-oxidant shown in literature to inhibit glycation in samples degassed with nitrogen. Ionic strength (salt concentration) is one of the major factors that affect protein physical and chemical reactions. Inhibiting the chemical reaction between reducing sugars and proteins in vivo is a potential therapy for reducing diabetic complications. Thus the effect of ascorbic acid and sodium chloride (NaCl) on glycation was investigated in a multivariate experimental design to assess the effect of combinations of the two nutrients on glycation. By identifying combinations of nutrients that inhibit glycation, one can modify patients’ diet to help improve the symptoms.

Objective: The purpose of this project was to assess the effect of ascorbic acid and sodium chloride on serum albumin glycation, with dextrose as the glycating agent.

Methods: A central composite design consisting of varying amount of dextrose, ascorbic acid, and NaCl was used in the study. 10 mg/ml bovine serum albumin (BSA) samples in the different formulations were prepared under atmospheric conditions (to simulate real-life scenarios) and incubated for 38 days at 50°C and over 9 months at 37°C. Samples were measured using ultraviolet and fluorescence spectroscopy to monitor the glyco-oxidation process. SDS-PAGE and size-exclusion chromatography (SEC) were used to monitor aggregation of BSA. The experimental design was created, data analyzed, and statistically significant factors identified using JMP software.

Results: As expected, higher levels of dextrose, resulted in increased UV absorption and fluorescence, indicative of increased glycation. Similar results were also observed with higher levels of ascorbic acid even in the absence of dextrose,
indicating that ascorbic acid glycated the protein. SEC showed increased aggregation at higher levels of dextrose, ascorbic acid, and NaCl. A competitive interaction was observed between ascorbic acid and dextrose, such that the effect of dextrose on aggregation was less pronounced at high ascorbic acid concentration. The results showed that the high levels of ascorbic acid assessed in this study, in the presence of oxygen, promotes the glyco-oxidation-aggregation process. The results of this study are important in understanding factors contributing to protein glycation and aggregation.

Conclusions: This study confirms that ascorbic acid, in a cell-free system and in the presence of an oxidizing agent, promotes, rather than inhibits glycation.

Disclosures: none

The Effect of Fluoroquinolones on Mortality and Nephrotoxicity in Patients with Gram-Negative Bacteremia
Natalie Johnston, Carlos Alvarez, Eunice Yoo, Andrew Faust, Ed Goodman, Ronald G. Hall
Texas Tech University Health Sciences Center, School of Pharmacy, Dallas, Texas

Background: There have been few studies in community hospitals examining the use of fluoroquinolones as empiric therapy on mortality and nephrotoxicity in patients with gram-negative bacteremia.

Objective: To evaluate the impact of fluoroquinolone-containing regimens on all-cause 30-day mortality and nephrotoxicity of patients being treated for gram-negative bacteremia.

Methods: The cohort included patients ages >/=18 years with bacteremia from *Escherichia coli*, *Pseudomonas aeruginosa*, *Enterobacter sp.*, *Klebsiella sp.*, *Acinetobacter sp.*, or *Stenotrophomonas maltophilia* between 1/1/2008-8/31/2011 who received >/=48 hours of antibiotics. We compared 30-day mortality and rate of nephrotoxicity of fluoroquinolone use versus non fluoroquinolone use. A multivariable stepwise logistic regression was performed with variables identified by conceptual modeling and univariable analysis.

Results: The cohort was 78% non-fluoroquinolone regimens and 22% used fluoroquinolone regimens. Fluoroquinolone use had similar 30-day mortality rates in the univariable (14.3% vs. 13.0%; OR 1.11, 95%CI 0.53-2.35) and multivariable analysis (OR 0.95, 95%CI 0.38-2.37). Factors independently associated with 30-day mortality were cancer (OR 2.56, 95%CI 1.21-5.44) and Pitt bacteremia score >/=4 (OR 15.01, 95%CI 7.01-32.12). Fluoroquinolone use also did not affect the incidence of nephrotoxicity (11.4% vs. 15.4%; OR 0.71, 95%CI 0.32-1.57). Factors independently associated with nephrotoxicity included baseline serum creatinine >2.0 mg/dl (OR 2.32, 95%CI 1.18-4.59) and vasopressor use (OR 5.10, 95%CI 2.5110.36).

Conclusion: Fluoroquinolone use was not associated with 30-day mortality or nephrotoxicity in this study.

Disclosures: Dr. Ronald Hall sits on an advisory committee for GeneTech. The other authors have nothing to disclose.

Impact of insulin detemir administration time on glycemic excursion rates
SN Kutter, JL Grelle, JC Tawwater, ME Geurds
Texas Tech University Health Sciences Center School of Pharmacy, Abilene, TX

BACKGROUND: The 2016 ADA Standards of Care states insulin is the preferred strategy for glycemic control for inpatients. Hypoglycemia, the major side effect of insulin, is associated with mortality and hospital length of stay. The most common long-acting insulin agents used are detemir and glargine. Glargine has a 24-hour duration of action, with sparse data suggesting AM administration may result in less hypoglycemia. In contrast, detemir has a shorter duration that may lead to inferior glucose control and hypoglycemia. To date, no data exists on the correlation between detemir administration and rates of hypoglycemia.

OBJECTIVE: Evaluate the frequency of hypoglycemic episodes between subjects administered detemir in the morning (0900) versus evening (1800/2100) versus twice daily.
METHODS: A retrospective review of medical records was used to identify subjects admitted between January 1, 2014 and December 31, 2015 after being initiated on detemir ≥ 48 hours. Study population includes patients 18-89 years of age with a length of stay ≥ 48 hours.

RESULTS: After collection and unadjusted analysis of 12 months of data, there is a trend towards reduced hypoglycemia in those receiving detemir in the morning as compared to those receiving detemir in the evening.

CONCLUSIONS: Current trends show there is less hypoglycemia in those who receive detemir in the morning. Additional data collection will elaborate on the link between detemir administration, glycemic variability, and hypoglycemia.

DISCLOSURE: SN Kutter has nothing to disclose. JL Grelle has nothing to disclose. JC Tawwater has nothing to disclose. ME Geurds has nothing to disclose.

Student Perception, Attitude and Barriers to Completion of Assigned Reading Material During Pharmacy School
DC Ly, ML Fleming, ML Johnson, MA Wanat
University of Houston College of Pharmacy, Houston, Texas

Background: The Doctor of Pharmacy education is a rigorous curriculum, with difficult material to comprehend and apply within a short time frame. With the fast-paced learning experience, professors balance covering in-class material and self-directed student learning in order to maximize the understanding of concepts. Supplemental readings are commonly assigned to assist students with application of difficult to learn concepts. Student completion of reading assignments is up to the individual student and their reasons for completion may vary. As of yet, there is no published data that pertains to pharmacy students and the influential factors that are involved in their completion of assigned readings.

Objectives: To determine the major obstacles or factors that influence the completion of assigned reading material by Texas pharmacy students.

Method: This research study design utilized a survey sent out to all Texas pharmacy students who were enrolled in a didactic pharmacy course during the spring 2015 semester to participate. Variables for analysis through survey questions included: Student Demographics, Assigned Reading Completion, Obstacles or Factors that Influence Completion of Assigned Readings. IRB approval for the survey and protocol was obtained by the University of Houston.

Results: A total of 168 students from two colleges of pharmacy participated in the survey. Responses were obtained with representation for each of the four program years during the spring 2015 semester: P1 (n=57), P2 (n=57), P3 (n=33), P4 (n=18). There was no difference seen when comparing course load (working vs. not working) to reading completion percentages. Students in the first two professional years were more likely to complete assigned reading compared to students later in the curriculum (df=9, p-value = 0.0452). The most influential factor for completing assigned readings was because content would be assessed on exams or quizzes (69% listed as major influence). There was no difference seen between commonly perceived barriers (cost of textbook, time requirements, interest in topic, format of reading) and the level of impact this had on students completing assigned readings (df=21, p-value = 0.0031).

Conclusion: Pharmacy students’ course load as well as their employment status during the spring 2015 semester showed no role in the percentage of assigned readings they completed while those in the earlier two years of pharmacy school were more likely to complete their assigned readings compared to those in the last two years of their program. Barriers such as cost of material, time commitment, personal interest, and reading format impact students’ completion of assigned material. Although faced with a number of obstacles or influencing factors regarding completion of assigned reading material, students are most commonly influenced by the subsequent examination or quizzing of the material.

Disclosure: 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.
Elements of the Best Medication Reconciliation Process: A Literature Analysis to Define the Best Practice of Medication Reconciliation
LM Rakouki, E Welsh, G Hwang, S Cox
Houston Methodist Hospital

Background: The literature demonstrates that medication reconciliation is critical in improving patient care and safety outcomes. The Joint Commission on Accreditation of Healthcare organizations defined to “accurately and completely reconcile medications across the continuum of care” as the 8th National Patient Safety Goal in 2005. Hospitals have taken various approaches in implementing medication reconciliation into their systems. However, this practice has not yet been standardized.

Objective: The primary objective is to evaluate the current literature on medication reconciliation and define the best practice.

Methods: A literature search identified 38 articles that were analyzed for the following end points: completion of a medication history (MH) and/or medication reconciliation (MR), the professional(s) completing the MH and/or MR, the timing of the MH and/or MR, types of discrepancies found, clinical relevance of errors that occurred, and effect of MHs and/or MRs on hospital readmission and cost.

Results: Of the 38 articles analyzed, 28 had a MH completed and 36 had a MR completed. Pharmacists completed MH and MR in 11 and 19 articles respectively. In 13 articles, MH and MR completion was collaborative including a pharmacist/pharmacy department. Outcomes that were assessed include captured discrepancies with clinical relevance (n=12), reduction in readmission rates (n=10) and cost (n=4).

Conclusion: The literature supports a medication reconciliation process lead by a pharmacist with collaborative efforts of other professions. Implementing this standardized best practice will reduce medication errors, readmission, and ultimately cost.

Disclosure: All authors have nothing to disclose

A Cost Comparison of Consumer Price Per Month of Guideline Directed Medical Therapy (GDMT) for Secondary Prevention of Acute Coronary Syndrome
DA Reyna, BA Kalich
The University of the Incarnate Word- Feik School of Pharmacy, San Antonio, Texas

Background: Heart disease is a major public health concern as it is the leading cause of death in the United States. Secondary prevention of acute coronary syndrome (ACS) can improve overall morbidity and mortality, and decrease long-term costs.

Objective: To compare the consumer price per month (CPPM) of secondary prevention of ACS medications between pharmacies, types of pharmacies, and geographic area. To determine the type of pharmacy with the most affordable secondary prevention of ACS GDMT based on CPPM.

Methods: CPPM of 19 prescription medications used for GDMT for secondary prevention of ACS were collected from 13 different pharmacy sources. Minimum cash CPPM for optimal GDMT was determined by selecting the most affordable medication in each class to include in the summative monthly therapy cost. The mean CPPM, median CPPM, standard deviation, range, 25th and 75th quartile were calculated for each product and then used to determine the most affordable GDMT between pharmacies, types of pharmacies, and geographic area. All costs were rounded to the nearest dollar and all discount programs were excluded.

Results: The most affordable CPPM by pharmacy was found to be from the “superstores”, with a minimum average CPPM of $94. Considering the most affordable monthly therapy in both regions, by aggregated data, was more affordable at $223 in San Antonio.
Conclusion: Medication therapy prices vary by pharmacy type and region. Healthcare providers should educate patients with ACS on affordability of GDMT at the superstores and the importance of using one pharmacy for all prescriptions.

Disclosures: Authors have no disclosures concerning possible financial or personal relationships that may have a direct or indirect interest in the subject matter of this study

Title: Opportunities to Educate Patients, Prescribers and Students: Inappropriate Utilization of Geriatric Drugs on the BEERs List
Tyrane Roberts-LaGrone, Vinodha Sadasivam, Annesha White
UNT System College of Pharmacy, Fort Worth, TX

Objective: Of 677,580 patients receiving prescriptions through Medicare Part D, 31.9% received an inappropriate medication. Inappropriate use of medications costs $177 billion annually. Educating students and prescribers to change prescribing practice based on the BEERs list will reduce inappropriate prescribing. Pharmacist provided medication therapy management (MTM) services promote safe and effective use of medications resulting in better patient health outcomes. The objective of this study was to identify drugs most commonly prescribed to geriatric patients, compare those drugs to the BEERs list and identify opportunities for education to minimize adverse effects (AE) utilizing MTM.

Methodology: Using three sources (NewWest, Propublica, Aetna), 135 drugs were identified representing the most commonly dispensed and/or sold prescriptions for Medicare Part D (CMS 2013). The drugs were compared to the BEERs list. To identify MTM examples, a literature search using PubMed, Medline, CINAHL and Google Scholar was performed from 2010-2015. Key search terms were “seniors”, “geriatrics”, “MTM” and “AE.”

Results: Upon comparison, 15 of the 135 drugs were on the BEERs list and deemed inappropriately prescribed. Specifically, antipsychotic quetiapine has a black box warning of increased mortality in elderly patients with dementia-related psychosis. The most frequently prescribed inappropriate drugs were valsartan, omeprazole, and olanzapine. Common AE that maybe mitigated by MTM were sedation, orthostatic hypotension, anticholinergic effects and hypoglycemia.

Conclusion: The BEERs list was developed as a safeguard against inappropriate care for the elderly. Interdisciplinary education efforts and pharmacist MTM services emphasize the importance of the BEERs list to improve treatment outcomes for individual patients.

Development of a Prediction Tool for Recurrent Clostridium difficile Infection in a Veteran Population
SA Rumbellow; JR Argamany; SM Allen; KR Reveles
University of Texas at Austin College of Pharmacy, Division of Pharmacotherapy, San Antonio, Texas

Background: Clostridium difficile infection (CDI) is the main cause of nosocomial infectious diarrhea and recurrence is common. Currently, clinicians lack guidance on how to use CDI recurrence risk factors to improve patient care.

Objective: The objective of this study was to derive and validate a clinical prediction rule for CDI recurrence.

Methods: This was a retrospective cohort study of patients 18-89 years with an International Classification of Diseases, 9th Revision Clinical Modification code for CDI (008.45) receiving care at United States Veterans Health Administration (VHA) hospitals and clinics from 10/1/2002 to 6/30/2012. Patients with CDI in the previous year or who died within 60 days of treatment were excluded. A CDI 60-day recurrence prediction rule was derived using backward stepwise logistic regression. The model was validated in the derivation cohort and in a validation cohort using recurrence rates and correlation.

Results: The cohort included 48,269 patients. Prediction rule variables included chronic obstructive pulmonary disease, renal disease, dyslipidemia, white blood cell count ≥15,000 cells/ml, prior antibiotics, white race, principal CDI, and community-onset, healthcare facility-associated CDI, for a total of 23 possible points. Risk score was strongly correlated with recurrence (R²=0.93). Patients were split into risk groups with recurrence rates as follows: low risk (17%), medium risk (26%), and high risk (36%). Rates of recurrence were similar between derivation, validation, and overall cohorts.

Conclusions: Increasing risk score was strongly correlated with CDI recurrence. This prediction rule may be utilized by
Analysis of Nursing and Pharmacy Technician Practices of Safe Medication Distribution Processes

LM Solis, EO Njigha, D Pham, AC Colavecchia
Houston Methodist Hospital, Houston, Texas

Background: Approximately 3-6.9% of inpatients are affected by medication errors, which costs hospitals billions of dollars each year. Of these errors, 11% are due to medication distribution errors. Errors in medication distribution may arise from nurses’ and pharmacy technicians’ inadequate knowledge of such procedures as shown in a previous study. Results of this study may direct hospitals to emphasize proper education and practice of medication distribution.

Objective: The objective of this study is to assess nurses’ and pharmacy technicians’ practice of medication distribution processes and implement and analyze process solutions and education opportunities to ensure optimal and safe medication distribution.

Methods: Nurse and pharmacy technician practices of medication distribution and storage were analyzed through different variables at Houston Methodist hospital. Data collection was performed on six units before and after educational interventions were implemented. A simple, convenient sample of technician assessments were collected after interventions as well.

Results: There was a reduction of a sum total of inappropriate items found after educational interventions (n=1354) from pre-interventions (n=1751, p=0.234). Reduction of inappropriate performance was seen on most floors for every type of inappropriate item found. Technicians had a significant increase in correctly answering a question regarding a principal detail of the process comparing before and after educational interventions (p=0.001).

Conclusions: Educational interventions resulted in reductions in inappropriate practices regarding medication distribution and storage. However, further studies should be completed to reach significant findings with a larger sample size and to determine sustainability of interventions.

Disclosures: None of the authors have financial conflicts to disclose.

Evaluating the incidence of palbociclib-related toxicities at a cancer center

Li Vera, Za Naini, Ro Hunter
Memorial Hermann Texas Medical Center Hospital, Houston, Texas; Texas Southern University College of Pharmacy and Health Sciences, Houston, Texas

Background: Palbociclib, a cyclin-dependent kinase’s (CDK) 4 and 6 inhibitor has gained popularity in treating hormone-receptor positive breast cancer patients. Initially approved in combination with letrozole for post-menopausal women, as first line agent, now a recent approval expansion in combination with fulvestrant for metastatic breast cancer patients with progression on endocrine therapy. Despite treatment success in the combined regimens, treatment-related toxicities including neutropenia were inevitable.

Objective: The primary outcome of the study is to assess the number of incidence of palbociclibrelated adverse effects at a cancer center since February 2015.

Method(s): This is a prospective, open-label, intent to treat study. The study criteria included pre-and postmenopausal women 18 years of age with estrogen receptor (ER) positive metastatic breast cancer. Clinical oncologist pharmacist identified eligible participants and determined their appropriate study arm. The patients received oral palbociclib plus subcutaneous goserelin and intramuscular fulvestrant; or oral palbociclib and intramuscular fulvestrant; or oral palbociclib and letrozole.

Result(s): The study is currently ongoing with a total of 20 patients that have been enrolled in the study. Most commonly
observed palbociclib-related adverse effects were anemia and leukopenia present in all three-study arms. A total of six patients have discontinued the use of palbociclib due to adverse-effects, related to gastrointestinal and fatigue. Neutropenia was present in four patients that required a dose reduction from palbociclib and letrozole and palbociclib and fulvestrant study arms.

Disclosure: Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of the presentation, with the exception of Rodney Hunter. Rodney Hunter is a speaker of bureau for Pfizer, current manufacturer of Palbociclib (Ibrance.)

Environmental Prevalence of Clostridium difficile on Low-touch v. High-touch Areas at Houston Public Parks
K.R. Wasko, M.J. Alam, A. Anu, J. Miranda, K.W. Garey
University of Houston College of Pharmacy, Houston, TX

Background: Community-acquired C. difficile infections are a leading cause of life-threatening diarrhea and pose a burden on healthcare in North America. The prevalence of environmental C. difficile outside of the inpatient setting has been relatively unexplored until now. Since the prevalence of C. difficile from public sources is unknown, this study attempts to determine if there is a presence of C. difficile in the environment.

Objectives: Objectives of this study were to determine if C. difficile is present at public parks in Houston, explore trends of C. difficile toward ‘high-touch’ or ‘low-touch’ areas in parks, and to highlight differences in ribotype trends in positive isolates.

Methods/procedures: Samples were taken from twenty-two randomly selected parks in the Houston area. All samples were plated on CCFA media and allowed to grow in anaerobic conditions for 48-72 hours. Suspected colonies then underwent PCR for detection of tcdA/tcdB genes. Positive toxigenic samples were subsequently tested via fluorescent PCR for ribotyping.

Results: Of 228 total samples, 71 grew C. difficile of which 49 were determined to be toxigenic. There was no difference between ‘high-touch’ and ‘low-touch’ samples. The most common ribotypes noted were UM11, UM12, and O14-O20.

Conclusions: Of total samples plated, 31% grew C. difficile on CCFA media and 23% were PCR toxin positive. There was no difference noted between ‘high-touch’ and ‘low-touch’ PCR toxin positive samples. Fluorescent PCR ribotyping revealed that the most common ribotypes (n>5) were UM11, UM12, and O14-O20 with the latter occurring more frequently in low-touch areas. This study illustrates that toxigenic C. difficile has a ubiquitous presence in Houston public parks & further studies are needed to explore this topic in depth.

Disclosures: Neither the primary nor secondary authors have any disclosures to provide.

Implementing Rapid Diagnostic Tests improve antimicrobial stewardship outcomes and times in patients with Gram-positive bloodstream infections
BA Xu, AK Sofjan, MJ Alam, KW Garey
University of Houston College of Pharmacy, Houston, Texas

Background: Accelerate ID/AST is the only rapid diagnostic test that can rapidly use genomic identification to achieve species-level identification in approximately one hour and determine susceptibilities in <six hours using a positive blood culture Gram-stain.

Objective: The objective of this study is to assess the potential improvement in time to initiating therapy changes as well as prevention of inappropriate antibiotic use that could be made by an antimicrobial stewardship team using the Accelerate ID/AST system.

Methods: A retrospective cohort simulation study was conducted with patients from a large tertiary care hospital in the Houston Texas Medical Center. Inclusion criteria were patients >18 years of age with bacteremia due to Staphylococcus
TSHP Research & Education Foundation
2016 Poster Competition Abstracts

**aureus** or Enterococcus Faecium or E. Faecalis from July 2014-June 2015. A clinical review was conducted on each patient to evaluate potential opportunities to optimize antimicrobial treatment using results from the Accelerate ID/AST system.

Results: A total of 171 patients were included in the study, and from these patients, a total of 281 possible pharmacologic interventions were discovered. 89% (249) of interventions were concordant. From these interventions, 9 were to escalate therapy, 98 to start targeted therapy, 171 to stop current therapy, and 3 were to prevent use of antibiotics. The median time difference between conventional interventions and Accelerate ID/AST interventions was 41.05 hours while the IQR was 24.4 hours-67.0 hours.

Conclusion: Rapid Diagnostic Tests such as the Accelerate ID/AST system can greatly benefit antimicrobial stewardship teams by not only decreasing time to organism identification but also time to identify culture susceptibilities.

Disclosures: KW Garey received funding for this study from Accelerate.

**Technician Category**

**Technician Leadership and ADC Management - Improving Efficiency and Nurse Satisfaction While Decreasing Costs**
Jennifer E. Arzú, Sarah Lake-Wallace, MS, PharmD
TIRR Memorial Hermann Hospital, Houston, Texas

Background: With rising costs of medications and reimbursement changes in healthcare plans, it is imperative for pharmacy departments to improve practices in order to remain within budget. Automated dispensing cabinet (ADC) provide opportunities to manage drug inventory and monitoring but effective utilization of the tools is important. TIRR Memorial Hermann (TIRR) is a 134 bed acute care rehabilitation facility which utilizes ADC’s for 90% of medication. The pharmacy is staffed with 4 full time technicians including one dedicated to oversee the ADC. Prior to project, standardizations around standard stock and removals were inconsistent.

Objective: Assess the outcomes of standardization practices by the use of ADC’s through the use of standard stock, regular removal of unused medication and regular monitoring.

Methods: This observational study was conducted from January 2014 to February 2016. During 2014 the unloading and placement of standard stock medications were very inconsistent due to lack of standardization. Practices were assessed at the beginning of 2015 which led to increased standard stock medications as well as the removal of medications without orders to be completed each month.

Results: A reduction of $40,000 in inventory. Vend to refill for our facility has remained the same, and there was no increase in staffing. During fiscal year 2014-2015 unused medications surpassed 600 each month, now it averages 350 each month.

Conclusion: This new process has significantly reduced our facilities unloads, inventory and most importantly has not had an effect on our patient care. The standardization process has increased nursing satisfaction.

Disclosures: All authors have nothing to disclose

**Waste Not, Want Not: Reducing Pharmacy Antibiotic Waste**
Codie Blaser, CPhT, Nancy Lambright, CPhT, James Tyler, PharmD
Trinity Mother Frances Hospitals and Clinics

Objective: To lower the amount of loss caused by expiring antibiotics, and help with current and future drug shortages.

Background: Mother Frances Hospital is a 474-bed private, acute care hospital located in Tyler, Texas. The pharmacy Processes ~3500 orders per day. Decentralized technicians responsible for specific areas of the hospital restock and service 3 to 6 Pyxis machines up to 4 times daily. The institution is primarily served by one central IV room.
Prior to intervention, medications joined to Baxter Minibag Plus systems ("pop-togethers") were prepared each day with no set limit. Average wastage per day exceeded 35 pop-togethers, with cost exceeding $600/day.

Method: To support targeted usage and preparation, a report was developed from the Epic EHR to list all ordered pop-togethers with frequency. The report is run every 8hrs to drive refilling of Pyxis machines based only on current orders. The IV room only makes 24hrs supply each day. Pyxis minimums and maximums were decreased, and Minibag sizes were changed from 50ml to 100ml to increase expiration date.

Results: All pop-togethers now have 30-day expiration. Use of reporting to target preparation and refilling reduced waste by about 50%. The Epic report also aids the buyers in anticipating antibiotic usage – reducing overall cost and improving ability to weather drug shortages.

Conclusion: A data-driven and teamwork approach to reducing pop-together waste helped our hospital maintain adequate stock through drug shortages and reduce cost.

Perception of Use of Medication Tracking Software at a Community Hospital

FBurnett, KMunch, MGesssner
Kingwood Medical Center, Kingwood, TX

Background: Missing medications and status updates on critical medications are common issues faced by Nursing and Pharmacy staffs. These issues create delays in patient care and negatively affect productivity. Items considered missing may require staff time to locate or remake. Status updates on critical medications include where in the delivery process items are. This may lead to anxiety and a perception of delayed response time.

Objective: The purpose of this study is to demonstrate pharmacy and nursing staff members’ perception of the medication dispense process before and after the installation of Medication Tracking Technology.

Method(s): A seven question online survey was developed using SurveyMonkey®. The survey was emailed to Nursing Managers, Charge Nurses and all Pharmacy staff members to rate and respond using a Likert Scale.

Result(s): Surveys were completed by 39 out of 119 nursing leadership members and 26 out of 52 pharmacy staff members. Responses to each question were averaged and compared between the departments. In general, responses were consistent between the two departments. Variances were found on questions related to the perception of medication status before and after software installation and the program ease of use.

Conclusion(s): The Medication Tracking Technology employed at Kingwood Medical Center has demonstrated success in improving nursing and pharmacy staffs’ perception of the medication dispensing process. Nursing perceives that with the technology employed, Pharmacy is able to identify areas for process improvements. Future steps should include additional nursing education on the program portal during onboarding and at annual nursing skills fairs.

Disclosure(s): Authors of this presentation are customers of and use Aethon technologies.