Texas Society of Health-System Pharmacists
Research & Education Foundation

2017 Poster Competition
Administration
Background: Memorial Hermann Memorial City Medical Center (MHMC) Pharmacy department distributes a Nursing Satisfaction Survey (NSS) annually to monitor satisfaction of services provided. Scoring is based on a scale of 1 to 5 (1= does Not meet expectations; 5= Outstanding). In 2016 the overall average score was 3.09 or just above “meets expectations”.

Objective: The Adopt a Unit (ANU) expansion will continue to improve collaboration between the pharmacy and nursing units by addressing medication-related concerns and resolving causes of delayed medication delivery.

Methods: Pharmacy staff was divided into teams and assigned to 8 units in July 2014 to attend unit meetings, provide informal nursing education, and follow up on issues reported monthly. This program expanded hospital-wide in September 2015. NSS scores from 2015 prior to ANU implementation in these new areas are compared to 2016 results to assess improvements.

Results: Result data presented in bar graph format. Average scores for the new ANU areas were higher compared to the total average (3.26 vs. 3.09). Average scores increased from 2015 (pre-ANU) to 2016 (post-ANU) in the new areas (2.97 vs. 3.26).

Conclusions: The Adopt a Nursing Unit Program has been successful in its full implementation and continues to refine its services for FY17.

Disclosures: Nothing to disclose.
Quality and Financial Impact of MDI to Nebule Conversion and Pulmicort to Dexamethasone Autosubstitution
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Practitioner – Administrative/Practice Management
Not previously submitted at a professional meeting

Background: Many patients being managed for asthma or COPD are prescribed oral inhalation powders via Metered Dose Inhalers (MDI) to control their disease states. The active ingredients include inhaled corticosteroids, long-acting beta-2 agonists, anticholinergics, or combinations of multiple drug classes. Maintaining equivalent products to the many commercially available products requires careful stock management. Many patients receive one or two doses out of an MDI prior to discontinuation or discharge. Many health-systems adopt autosubstitution strategies to reduce the variety of stocked products.

Objectives: The objective is to evaluate the financial impact of instituting an autosubstitution of MDI and inhaled corticosteroids to inhaled dexamethasone, albuterol, and ipratropium.

Method(s) or Procedure(s): Utilizing a P&T Committee approved autosubstitution rubric, nebulized products are entered on the patient’s medication profile. The majority of commercially available products are substituted to dexamethasone injectable vials, albuterol nebulules, and/or ipratropium nebulules. Respiratory Therapists review the accuracy of the final autosubstitutions prior to administration.

Result(s): In the eight months prior to the autosubstitution, the total drug acquisition expenditure was $114,931. This expenditure was $31,013 in the following eight months, which represents an annual savings of approximately $125,000. MCMC Pharmacy no longer maintains stock of Symbicort, Spiriva, Flovent, Ventolin, Combivent, and Atrovent MDI’s. The previous annual usage of these products has been virtually eliminated.

Conclusion(s): Significant potential cost reductions in respiratory medications may be realized without impacting patient care via implementing autosubstitutions from MDI’s to other inhaled medications. Respiratory Therapists may be further utilized and engaged in patient care, and less MDI products will being stocked and potentially wasted.

Disclosure(s): S Knight resides on the TSHP R&E Foundation Poster Review Committee, but has been recused from judging all posters in this category.
When Texas pharmacists gain provider status, which reimbursement model should be implemented?

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Practitioner Education
Not previously presented

Background: Texas pharmacists will gain provider status in the next few years. In the meantime, Texas pharmacists should educate themselves on various reimbursement models and be prepared to have an active voice after provider status is established.

Objectives: The objective of this poster is to educate pharmacy practitioners, pharmacy students, and seminar attendees about the reimbursement model options for pharmacists as providers.

Method(s) or Procedure(s): Keyword searches were done in Pubmed, Clinicalkey, and Google with keywords: reimbursement, pharmacists, Medicare, Medicaid, reimbursement model. Information from American Society of Health-System Pharmacists, California Pharmacists association, and American Pharmacists Association will be provided via poster display to educate practitioners, students, and seminar attendees with strengths and weaknesses of each reimbursement model.

Results: Not applicable.

Conclusion(s): There are many reasons why a combination of reimbursement models should be implemented for Texas pharmacists with provider status. Both federal and state programs such as Medicare and Medicaid are essential to the population that pharmacists serve, pharmacists currently under collaborative practice agreements are functioning well, and third party payers pay on a fee for service basis for medication therapy management (MTM) services.

Disclosures: OM Collado has nothing to disclose. SE Grayson is a member of the TSHP Council of Professional Affairs.
Clinical
Pharmacoeconomic Impact of a Regional Antimicrobial Stewardship Program
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Practitioner: Clinical
Not previously presented

Background: Although not the primary purpose, antimicrobial stewardship programs have been demonstrated to reduce costs.

Objective: To measure the effect of a regional antimicrobial stewardship program (ASP) on anti-infective spending.

Methods: A regional ASP was implemented in January 2015. The anti-infective cost per adjusted patient-day (AI-CAPD) was calculated each month for all 6 hospitals within the San Antonio (SA) market of Tenet Healthcare from October 2014 through December 2016. Additionally, due to the wide variation in AI-CAPD between the hospitals, further analysis of patient populations was done in an attempt to explain the difference between the hospitals.

Results: In December 2014, 4 of 6 hospitals had an AI-CAPD of >$10. By December of 2016, no hospitals had an AI-CAPD of >$10. The antimicrobial stewardship program reduced the AI-CAPD by $4.01 from $11.03 in 2015 to $7.02 in 2016, which amounted to $1,918,100 in annual savings. In Q1 2016 AI-CAPD varied from $4.33 to $10.98 between hospitals. When comparing the hospitals, differences were found in the number of patients with infections per 1,000 discharges (range 82 to 291) and in the number of patients infected with multidrug-resistant organisms (MDROs) per 1,000 discharges (range 31 to 96). The hospitals with the highest AI-CAPD had the highest rates of infections and MDROs.

Conclusions: The ASP was effective at reducing anti-infective spending. A major contributor to the decreased use of anti-infectives was the spotlight put on antimicrobial stewardship since it was reported on the monthly balanced scorecard and discussed at multiple executive and medical staff meetings.

Disclosure: The author has nothing to disclose.
Review of Clinical Interventions/Education in an Established Antimicrobial Stewardship Program

**Background:**

The Joint Commission established a Medication Management (MM) standard for hospitals related to antimicrobial stewardship (MM.09.01.01) in 2017. Two of the elements of performance requires education be provided to staff/providers and hospitals to analyze and report data on its program.”

**Objective:**

Provide guidance from an established antimicrobial stewardship program in its seventh year. Show how a program could implement education and provide the necessary knowledge to enable clinical staff to increase interventions and thus reduce drug spend.

**Methods:**

The Antimicrobial Stewardship Committee developed education based upon the hospital’s needs and provided the information to the medical and hospital staff upon hire and quarterly through a 1-page educational flyer. In addition, a monthly division antimicrobial newsletter was distributed and one-on one education was provided. A retrospective analysis was conducted to evaluate the clinical antimicrobial interventions from 2015-2016 and the antibiotic spend from 2012-2016. The clinical interventions included but were not limited to discontinuing an antibiotic after adequate duration of therapy, de-escalation, inappropriate/antibiotic not indicated, intravenous to oral interchange, organism resistant to current treatment, antibiotic added – positive culture, evidence of infection, and renal dose adjustment.

**Results:**

The Antimicrobial Stewardship Committee developed and distributed the targeted educational flyer quarterly via e-mail to staff. Overall, clinical interventions increased from 4762 in 2015 to 6805 in 2016 (p<0.001) and drug spend decreased from $15.52 per adjusted patient day (APD) in 2012 to $7.99/APD in 2016.

**Conclusion:**

Patient care was improved and the Joint Commission standards were met. Clinical interventions increased and antimicrobial spend decreased.

**Disclosure:**

Sondra Davis has nothing to disclose, Darrell Newcomer has nothing to disclose, Caitlin Gibson has nothing to disclose, and Meenakshi Ramanathan has nothing to disclose.
Intravenous Iron Product(s) Usage in the Inpatient Setting at Memorial Hermann Memorial City
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Practitioner Clinical
Not previously presented

Background
Iron deficiency anemia is the most common nutritional deficiency worldwide. Oral iron is the first line treatment when appropriate per the American Family Physicians guidelines. For patients unable to take oral products, parenteral iron is an alternative option. A MUE was conducted to assess the appropriateness of IV iron utilization.

Objectives
To evaluate the appropriate usage of IV iron and prescribing patterns in the inpatient setting.

Methods
This is a retrospective analysis of adult patients who received IV iron between January and December 2015. Electronic medical records were utilized to identify baseline characteristics, appropriateness of IV iron dose based on manufacturer recommendations, and assess the ordering of appropriate labs prior to IV iron administration.

Results
A total of 132 patients met criteria with an average age of 61.3 years and average actual body weight of 81 kilograms. Hematology/oncology prescribed 36.4% of the IV iron with sodium ferric gluconate (40.1%) being the most commonly prescribed. Ferumoxytol and iron sucrose were found to be appropriately dosed 100% of the time. While sodium ferric gluconate and iron dextran were appropriately dosed 96% and 28.5% of the time, respectively. Prescribers were also found to be 80.1% compliant with administration of test doses for iron dextran. Appropriate labs were ordered for patients as follows; hemoglobin (99%), MCV (97.7%), serum ferritin (55%), and serum iron (61.3%).

Conclusions
In conclusion, this study demonstrated that there is variability in the specialty of prescribers and in the prescribing of IV iron as it relates to dosing and labs.
IMPLEMENTATION OF A STANDARDIZED MULTI-MODAL PAIN MANAGEMENT ORDER SET: IMPACT ON PAIN SCORES AND OPIOID USAGE.
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Not previously presented

Background: The use of multimodal analgesia (MA) is a key element of an Enhanced Recovery After Surgery (ERAS) program in optimizing the management of postoperative pain. Benefits of MA include reduced length of stay, improved patient satisfaction, lowered costs, earlier times of physical therapy milestones, improved pain control, reduced perioperative opioid consumption, and reduced opioid-related side effects.

Purpose: To compare length-of-stay (LOS), opioid use (morphine equivalents [ME]), and pain scores on the medical floor after implementation of an Enhanced Recovery After Surgery (ERAS) multi-modal pain management protocol and for the same time period before implementation.

Methods: Using data retrospectively collected from the institution’s electronic records, we compared medical floor pain scores, morphine equivalents, and length-of-stay for bariatric, gynecological, and general surgeons, including all modes of surgical intervention within the realm of each surgical specialty.

Results: For gastric sleeve and gastric switch procedures, average LOS (days), ME (equivalents) and pain scores were reduced. On the contrary, for gastric hernia repairs, average LOS and pain scores were increased whereas ME was reduced. For colectomy procedures, average LOS and ME were reduced, whereas pain scores were increased. For hysterectomy procedures, average ME and pain scores were reduced. For cystoscopy procedures, average ME and pain scores were reduced.

Conclusion: Based on the interim data, a multi-modal pain management protocol has led to a significant overall decrease in average morphine equivalents utilized for pain control after surgical interventions, with a reduction in length-of-stay and marginal differences in reported pain scores.

Disclosure: Disclosure: Authors of this poster 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 a COPD rescue kit project on COPD hospital readmissions

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CATEGORY: Practioner

SEMINAR: No prior presentations

BACKGROUND: As a provision of the Affordable Care Act of 2010, the Hospital Readmission Reduction Program penalizes hospitals if their COPD readmission rate is above an acceptable threshold. Currently the 30-day readmission rate in the US following an admission due to COPD exacerbation is around 20%. Along with financial viability for the hospital, avoiding COPD readmissions or exacerbation has a direct benefit on patient overall health and quality of life. Thus, interventions aimed at reducing hospital readmissions for COPD are needed.

OBJECTIVE: Provide COPD rescue kits to patients admitted to CHRISTUS Trinity Mother Frances Hospital, along with counseling, in order to avoid future COPD exacerbations and reduce 30 day readmissions.

METHODS: Identification of patients admitted to the hospital for COPD exacerbation who fit the inclusion criteria set forth through the study. Upon discharge patients are given a COPD rescue kit containing an albuterol rescue inhaler, Vortex chamber spacer, and 5-day supply of prednisone, along with counseling and color coded instruction sheet.

RESULTS: To date 69 COPD rescue kits have been distributed resulting in a 30-day readmission reduction from 17% to 11.7%. Distribution of COPD rescue kits is ongoing.

CONCLUSION: The results from the first 69 patients enrolled show definite improvement from a baseline 30-day readmission rate of 17% to 11.7%. Further study may be needed as 90-day readmission thus far is shown to be above the rate from previous studies.

DISCLOSURE: The author has nothing to disclose.
Newest tool in wound management: ADC
ADC managed protein supplement Juven® enhances wound healing
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Not previously presented

Background: Studies have shown that the nutritional supplement Juven® can improve wound healing. At our institution, when these supplements were ordered, they were often not given due to lack of administration accountability and hence a potential negative impact on patient care.

Objective: To examine if adding Juven® to the daily MAR by pharmacy and dispensing it via the automated dispensing cabinet (ADC) enhances wound healing?

Methods: A retrospective chart review of all patients with wounds at our facility on Juven® both before implementation of Juven in ADC (Jan 2014 to May 2015) and after implementation (June 2015 to June 2016). We examined wound measure changes, PUSH scores for pressure ulcers, number of wounds healed, time to heal, and length of stay.

Results: The change in length of the wounds post ADC was +1.67 cm/100 pt days vs – 5.62 cm/100 pt days respectively (p=.004). The change in width was –0.5 cm/100 pt days vs – 4.67 cm/100 pt days respectively (p=.0001). There were total of 43 wound in the pre-implementation period and 81 wounds in the post. Completely healed wounds increased from 18.6% to 42.0% in the post implementation period. The length of stay was decreased from 56.5 to 54.1 days. We were able to observe the wounds healing 15.5 days faster than before. The cost savings associated would be estimated to be $217.16 per wound (adjusted for 2016) (Frantz et al).

Conclusion: ADC is a viable cost saving tool for improved wound healing outcomes with the use of dietary supplement Juven®.

Disclosures: None
Display Only
Evaluating the Impact of Procalcitonin on Antibiotic Utilization in COPD Exacerbations
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Not previously presented

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

Objectives: The objective of this poster is to evaluate the impact of procalcitonin on antibiotic utilization in patients with COPD exacerbations.

Methods: This is a retrospective study evaluating the impact of procalcitonin on antibiotic utilization in COPD exacerbations. Patients with a primary diagnosis of COPD exacerbation, at least 18 years of age, who had a procalcitonin level drawn within 24 hours of admission will be included. The primary outcome of this study is antimicrobial duration of therapy. Secondary outcomes include hospital length of stay, 30-day readmission rates, ICU admission, requirement of invasive mechanical ventilation, and death.

Results: The analysis of 61 patients with COPD exacerbations revealed that 85.2% of patients studied received antimicrobial therapy despite insignificant procalcitonin levels (<0.15 ng/ml). The average duration of antimicrobial therapy was 4.2 days.

Conclusion: Procalcitonin has been studied to be beneficial in determining whether COPD exacerbations are bacterial or viral in nature. When used properly, measuring procalcitonin levels can help decrease unnecessary antibiotic administration. Based on the results of this studied, it is recommended to further educate healthcare practitioners in our facility on the utility of procalcitonin in this patient population.

Disclosure: Authors of this presentation have the following 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: Casey Dempsey, Shivani Patel, Ngan Vo, Chase Waxler
BACKGROUND: Methicillin-resistant staphylococcus aureus (MRSA) is a significant cause of health care-associated infections in cardiac and orthopedic surgery patients. Current guidelines recommend assessing multiple MRSA risk factors in addition to the MRSA colonization status, via MRSA polymerase chain reaction (PCR), to determine the need for the addition of vancomycin to standard surgical prophylaxis. Studies have yet to determine how MRSA PCR results correlate to established risk factors for MRSA surgical site infections.

OBJECTIVE: To determine the degree of correlation between risk factor-based screening and MRSA PCR based screening in cardiac and orthopedic surgery patients.

METHODS: This is a retrospective cohort study conducted at a 568 bed community teaching hospital. The study compares the MRSA risk factors found in patients who had a positive MRSA PCR result versus patients that had a negative MRSA PCR result.

RESULTS: A total of 500 patients were included in this study and 26 had a positive MRSA PCR result. As a risk factor, diabetes was identified in 11 PCR positive patients versus 270 PCR negative patients (42.3 % vs. 57%). MRSA surgical site infections occurred in 2 PCR positive patients and 1 PCR negative patient.

CONCLUSION: The results suggest that MRSA PCR may correlate with some of the MRSA risk factors. However, the small sample size in this study limits any statistical significance. The overall trend of the data supports the analysis of a larger sample size to provide a more thorough conclusion.

DISCLOSURES: Authors of this presentation have no concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of the presentation:
Evaluating the Current Sedation Practices on Mechanically Ventilated Adults in the Intensive Care Unit
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Resident/Post-Graduate (PGY1)
Not previously presented

Background: Critically ill, mechanically ventilated (MV) patients require adequate sedation to minimize unintended consequences of improper sedation. Guidelines recommend targeting light sedation with frequent assessment of pain, agitation, and delirium.

Objective: To examine the compliance of Memorial Hermann Southwest Hospital’s current practice to the Society of Critical Care Medicine’s sedation recommendations in an adult medical and surgical ICU.

Methods: This is a retrospective, observational study. Patients admitted to the ICU between August and October 2016 were evaluated if they were 18 years or older, admitted to the medical/surgical ICU, and MV for at least 24 hours. Information on baseline characteristics, clinical outcomes, results and frequency of pain, agitation, and delirium assessment were collected. Outcomes evaluated include duration of MV, hospital and ICU length of stay, all-cause mortality, incidence of achieving target sedation, incidence of delirium, self-extubation, tracheostomy and ventilator associated events.

Results: A total of 50 patients were assessed with similar baseline characteristics. The total duration of mechanical ventilation was 5 days. The average length of stay in the hospital was 13 days and 8 days in the ICU. 60% of the RASS assessments were within the goal of -2 to 0. Delirium was present in 10% of the CAM-ICU assessments. There were 2 incidences of self-extubation and 1 incidence of tracheostomy.

Conclusion: Light sedation was achieved in the majority of RASS score assessments and delirium was not detected in the majority of CAM-ICU assessments performed. Assessment frequency of pain, agitation, and delirium were not performed following SCCM guideline recommendations.

Disclosures: Authors of this presentation have the following 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: Kathaleya Yindeemark, Malar Narayanan, Samuel Akinyele, Todd Kelly, and Jennifer Steenburg have nothing to disclose.
Association Between Performance of Patient-centered Clinical Activities and Employee Engagement in Hospital Pharmacists
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PGY2 Resident Administrative/Practice Management
Vizient University Health System Pharmacy Network, Las Vegas, Nevada, 12/03/2016

Background: Employee engagement is defined as an employee’s commitment to an organization and the discretionary effort that they are willing to expend beyond their core responsibilities. A multihospital study using secondary data recognized a positive correlation between employee engagement and safety attitudes in nurses and physicians. A similar study focused on nurses working in the intensive care units found a statistically significant relationship between employee engagement and a culture of safety. Furthermore, they concluded that patient safety culture could be predicted based on employee engagement. Although studies have shown that highly engaged healthcare employees provide better quality care and have a stronger perception of a culture of safety, few studies have been conducted regarding employee engagement in pharmacy.

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

Methods: This IRB-approved, multi-hospital, cross-sectional study utilized a 30-item electronic questionnaire that was emailed to frontline hospital pharmacists in the Greater Houston area through convenience sampling. Results will be analyzed utilizing descriptive and inferential statistics with the SPSS statistical analysis software.

Results: A total of 215 responses were collected from 14 hospitals within the health system and 103 responses were excluded as they met the exclusion criteria. 118 responses will be analyzed for correlation. Final results are pending.

Conclusion: Pending results.

Disclosure: The authors of this poster have nothing to disclose.
Education
Improving HCAHPS Scores for Medication Teaching by Utilizing Pharmacy Students
Kathryn N. Pidcock, Shiney Karikottu

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Poster Category: Education

**Background:** Education on new medications is vital to ensure appropriate use of therapy, patient adherence, and overall quality of care. Effective communication and providing education regarding medications is a responsibility of all healthcare professionals involved in the patient’s care. The Hospital Consumer Assessment of Healthcare Providers and Systems Survey (HCAHPS) scores on medication teaching is an area where many institutions continue to struggle.

**Objectives:** To assess whether delegation of new medication purpose and side effects teaching by pharmacy students would impact HCAHPS scores, specifically in the medication domain. The two questions evaluated were, “Before new medications, did staff tell you what the medicine was for?” and “Did staff explain the side effects of a new medication in a way you could understand?”

**Methods:** HCAHPS scores for 3 months prior to and after implementation of medication education provided by pharmacy students were assessed. HCAHPS scores for two nursing units, neurosurgery and internal medicine, were evaluated for the study.

**Results:** For the neurosurgery unit, HCAHPS scores trended up after pharmacy students teaching was implemented. The internal medicine unit scores had no improvement in scores after implementation.

**Conclusions:** As noted during this project, having a pharmacy student assist with efforts to educate patients on the purpose and side effects of new medications can provide some additional leverage to increase HCAHPS scores in the medication domain. Some limitations to the project could be: response rate, co-morbidities contributing to satisfaction of overall care which led to lower HCAHPS scores on the internal medicine unit.

Disclosures: The authors have no disclosures.
Impact of Prescription Drug Plan Education and Switching To Lower Cost Alternatives
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Practitioner-Education
Not previously presented

Background: As an accountable care organization clinical pharmacist, my diverse role involves physician education, participating in pilot programs, analyzing data to assess and modify, prescription drug spending and taking referrals from care navigators for patients in our contract populations. My patient referrals include but are not limited to medication reconciliation, finding cost effective formulary alternatives, counseling patient education, pill box training and home visits. I have found in most cases, patients do not fully understand how prescription coverage works or how to reduce prescription cost.

Objective: To evaluate the impact of providing prescription drug plan education and the impact it has on switching to a lower cost alternative.

Method: Assess major changes to a prescription drug plan contract. In this case, the change in diabetic injectable medications tiers was identified. The patients were then contacted by phone, after 2 phone calls the patients were emailed. If a patient was reached, they received prescription drug plan education. The education included an explanation of tiers and their respective costs, the formulary changes affecting their care, medication education and formulary alternatives. They were then asked if they would consider switching prescriptions, if they wanted the information emailed to them and if they wanted us to send a fax to their doctor.

Preliminary results: 120 patients included in the project, 24 of them were excluded, 96 patients were contacted, 40 of the contacted patients responded and 18 patients that were reached desired to switch to a lower cost alternative.

Conclusion: To be determined.

Disclosure(s) – AN Chasse has nothing to disclose.
Student
Impact of a Comprehensive Quality Improvement Pain Program on Patient Perception of Pain
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Not previously presented

Background: Due to the growing recognition of the risks associated with managing chronic pain with opioid medications, it is critical for the medical community to assess the role of the most commonly prescribed medications for pain in all settings. Appropriate pain management has been correlated with improved patient satisfaction during hospitalization.

Objective: The purpose of this quality improvement pain study was to assess a patient’s perception of their pain management and their expectations regarding pain during hospitalization.

Methods: A retrospective cohort study was performed by assessing a random sample of 300 completed pain management questionnaires on a general medicine floor from November 2015 to December 2016 at Houston Methodist Hospital. Inclusion criteria consisted of adult patients experiencing pain and receiving pain medications with the ability to self-report their pain. Descriptive analysis was performed to analyze the data for its function to improve patient pain management. The primary endpoint of the study was to determine the proportion of patients taking home pain medications prior to admission with an expected pain goal of zero during hospitalization.

Results: Of the 300 questionnaires collected, 46% of patients reported taking pain medications prior to admission (PTA). The most commonly taken PTA pain medications included hydrocodone-acetaminophen, acetaminophen and tramadol. Of these patients, 25% reported an expected baseline pain goal of zero. Of the patients expecting a pain goal of zero, only 8% reported having a “very well” understanding of their disease state, only 6% reported having a “very strong” ability to control their symptoms, and only 3% reported having a great ability to function. Collectively, patients who had a better understanding of their disease, had an improved ability to control their symptoms, were more functional in their activities of daily living, and didn’t have unrealistic expectations about their pain management (pain goal of zero).

Conclusion: Patients require continuous education by health care providers regarding their pain management to better understand their medications and set realistic goals for pain relief. Opportunities exist for pharmacists to provide patient counseling and nursing education on pain management to improve a patient’s perception of pain and improve patient satisfaction scores during hospitalization.

Disclosures: Authors of this presentation have nothing to disclose
Evaluation of time to in-hospital venous thromboembolism based on various prophylactic strategies in obese patients

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Not previously presented

Background:
Venous thromboembolism (VTE) contributes significantly to morbidity and mortality in hospitalized patients. Although VTE prophylactic strategies are well defined for most patients, there is limited data regarding prophylactic strategies in obese patients.

Objectives:
The objective of this study is to assess the time to in-hospital VTE based on various prophylactic strategies in obese patients.

Methods:
This was a single center, retrospective, cohort study that assessed obese patients who developed an in-hospital VTE from September 2011 to June 2015. Obesity was defined as a body mass index (BMI) greater than 30 kilograms per meter squared. Patients met inclusion criteria if they were aged 18 years or older and diagnosed with a VTE during hospitalization. The primary endpoint evaluated time to in-hospital VTE based on mechanical prophylaxis alone, pharmacologic prophylaxis with mechanical prophylaxis, pharmacologic prophylaxis without mechanical prophylaxis, or no prophylaxis. Patient Characteristics were described using median and compared using Kruskal-Wallis Test. All statistical analysis was performed using Minitab 16.

Results:
A total of 126 patients had a median time to in-hospital VTE of 8 days. Patients receiving mechanical prophylaxis alone (n=80), pharmacologic prophylaxis with mechanical prophylaxis (n=8), pharmacologic prophylaxis without mechanical prophylaxis (n=12), or no prophylaxis (n=26) had a median time to in-hospital VTE of 8, 15.5, 11, and 6 days, respectively (p=0.085 for the comparison between groups).

Conclusions:
Patients receiving pharmacologic prophylaxis with mechanical prophylaxis appear to have a longer time to in-hospital VTE however, identifying a larger sample size may yield an association between various prophylactic strategies.

Disclosures: The authors have nothing to disclose.
Impact of the Aging Simulation on First Year Pharmacy Students in an Introduction to Patient Care Course
Holli Temple, Neelam Bhatt, Tania Joakim, and Saaia Maredia

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Category: Student

Background: As the population of adults over 65 years of age grows in the United States, our interaction with this age group as healthcare providers will significantly increase. In 2014, 46.2 million people were reported to be over the age of 65 years and this number is expected to increase to about 69.1 million by 2040. Currently, elderly Americans collectively make up more than one-third of outpatient spending on prescription medications and with these numbers projected to increase in the near future, pharmacists will be encountering elderly patients quite frequently in their practice settings. Exposing pharmacy students to this population early in the curriculum will aid in developing their skillset needed to provide quality care to elderly patients. As part of the first year curriculum, pharmacy students are assigned a resident in an assisted living facility (ALF). Students visit their resident at least six times per semester where they are given the opportunity to interact with their resident while indulging in various activities at the ALF, and also review their resident’s medication list. Additionally, as an extension of this course, the students are placed in discussion groups of 9-10 first year students where they share their unique experiences relating to their assigned residents. It is often difficult to empathize with a population that one does not relate to or lacks interaction with therefore, the activities within this course are designed to close the gap between the generations and promote quality care and thereby improving elderly patient outcomes.

Objective: The objective of this poster is to present the impact of various activities that simulate the physical and emotional effects of aging on first year pharmacy students. The goals of the activities for pharmacy students were to experience and understand the hardships of common degenerative diseases, decreased ability to rely on their senses, and to assess its impact on daily lives of the elderly patients as it relates to health care.

Method(s) or Procedure(s):

Physical Impairment Station

Osteoarthritis: Students were asked to put a few corn kernels in their socks and work the kernels around until they are underneath the metatarsals. They then put another pair of sock on to simulate edema. Students were asked to put two pairs of gloves on each hand, tape the thumb and ring finger joints and button their clothing.

Sensory Impairment

Vision impairment and Hearing loss: Lab goggles with an taped obstructions were used to simulate macular degeneration and glaucoma while saran wrapped glasses were used to simulate natural vision loss. Students were asked to read instructions on a prescription and a newspaper with these props. They were then instructed to draw a picture while receiving verbal instructions with earplugs and simulation goggles on. Taste : Students sampled a spoonful of Thick-it that was prepared with water

Emotional Loss

Students were asked to write down most cherished, possessions , hobbies and loved one's on sticky notes. They were then given certain situations that forced them to eliminate a hobby, possession, or person from their list.

Result: The results were gathered based on student responses from online surveys. The students were asked to evaluate their experience of the simulation and how it changed their mindset when caring for elderly patients. Majority of the students expressed the empathy and communication skills they gained from these activities. The constructive feedback consisted of including a wheelchair/walker as well as having more time and space during the
activities. When asked what their favorite activity of the simulation was, students responded: 31.9% Arthritic Hands, 28.6% Hearing and vision loss, 25.2% Loss of loved ones, hobbies, material possession, 4.2% Thickened water taste test.

Conclusion: This aging simulation allowed pharmacy students to gain better insight on difficulties that the elderly experience on a regular basis. The activities served to teach the students how to approach, communicate and care for their future elderly patients. The students learned from the physical, emotional and sensory impairments that were demonstrated through these activities. By physically experiencing these impairments, the students were able to have a more well rounded learning opportunity that could not have been achieved in a lecture based setting. The group of students as a whole, enjoyed each activity, however, there are changes that can be made to these activities to better represent the hardships the elderly patients face on a daily life.

Disclosure:
Neelam Bhatt: UT College of Pharmacy, PharmD Candidate 2018, Discussion Facilitators
Tania Joakim: UT College of Pharmacy, PharmD Candidate 2018, Discussion Facilitators
Saaiqa Maredia: UT College of Pharmacy, PharmD Candidate 2018, Discussion Facilitators
Medication reconciliation at admission and discharge: a gap analysis between the pharmacist-led medication reconciliation and the current practice
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Student poster
Not previously presented

Background: Literature demonstrates that medication reconciliation is critical in improving patient care and safety outcomes. Hospitals have taken various approaches in implementing medication reconciliation into their systems; however, this practice has not been optimized.

Objective: The objective of this analysis is to evaluate the current practice in medication reconciliation and investigate methods to improve current process at the Houston Methodist Hospital (HMH-TMC).

Methods: Voluntary surveys were constructed and distributed to nurses and clinical pharmacists throughout October 2016 and January 2017 to assess their aspects of current medication reconciliation process and the needs for discharge pharmacists. Survey results are collected and stratified by respondent type for descriptive analysis in each domain of current medication reconciliation process.

Results: A total of 79 nursing (RN) responses and 53 clinical pharmacist (RPh) responses were collected and analyzed. 90% RN and 75% RPh believed that the physicians should be in charge of medication reconciliation at discharge. 50.6% RN reported to be trained to perform adequate medication reconciliation in comparison to 76.9% RPh. Both 83.5% of nurses and 69.8% of clinical pharmacists showed a need for pharmacists designated for discharge medication reconciliation.

Conclusion: Medication reconciliation is considered to be the physician’s responsibility per institution policy. Despite the policy, many nurses and pharmacists perform medication reconciliation and intervene in medication reconciliation discrepancies to ensure safety and efficacy of the patient’s current therapy. Thus, current medication reconciliation process at the HMH-TMC is not optimal or well-defined, and it may benefit from additional pharmacy support.

Disclosure: All authors declare no conflict of interest.
Title:
Integrating Pharmacy Students into the Healthcare Teams of Tomorrow by Developing Interprofessional Relationships Today - TAMHSC Disaster Day

Authors:
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Abstract Keywords:
Interprofessional Education, Pharmacy

Abstract:
Healthcare teams of the future will include members from many different domains coming together to provide excellent care to patients at all stages within the medical system. With the addition of the Irma Lerma Rangel College of Pharmacy to the Texas A&M University Health Science Center, the college is in an excellent position to participate in interprofessional education activities at different stages of the curriculum. Texas A&M Health Science Center is poised to be a leader in interprofessional education with four of the five colleges represented at the Bryan-College Station campus (Medical, Nursing, Public Health, and Pharmacy). The most robust participation in interprofessional education by the Rangel College of Pharmacy is through the annual Texas A&M Health Science Center Disaster Day.

Disaster Day is a mock disaster simulation organized and executed by the College of Nursing with the assistance of students and faculty from the Colleges of Medicine, Public Health, Veterinary Medicine, and Pharmacy all working together to make the event a true interprofessional experience. The Rangel College of Pharmacy was well represented by students at various stages in the professional program assuming roles as patients, dispensing and clinical pharmacists. A strong foundation of interprofessional relationships and appreciation of each profession’s skill set throughout the pharmacy curriculum may better prepare students to work on interprofessional teams.

This presentation serves as an overview of the Rangel College of Pharmacy’s growing role in the Disaster Day simulation as well as to encourage further discussion regarding interprofessional experiences in pharmacy education.
Title: A survey of fourth year pharmacy students used to determine the impact of multiple residency preparatory programs for the residency match process. (22 words)
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Pharmacy Student Category
Not previously presented

Background: To assist our fourth year pharmacy students with the residency interview process, several preparatory informational sessions and formal programs have been implemented over the past year. (26 words)

Objective: To evaluate the impact and effectiveness of these programs and identify opportunities for improvement based on the experiences of the Class of 2016. (23 words)

Methods: All students in the Texas Tech University Health Sciences Center School of Pharmacy (SOP) Class of 2016 that participated in the ASHP residency match process were asked to participate. The survey included a series of questions to assess student preparation for the residency interview process. The 22 questions included items regarding participation in a school-wide residency information session, Midyear Clinical meeting preparation session, Mock Interview Day and Career Fair residency preparation session. Free text responses were encouraged for each of the questions to allow for commentary on the strengths of these programs and opportunities for improvement. (96 words)

Results: A total of 43 students participated in the survey. Out of the 43 students, 23 attended the school-wide residency information session and 40% found it to be beneficial. Half of the students (20/40, 50%) responded they attended the Midyear Clinical meeting preparation session, yet only 44% found it be beneficial. While less students participated in the Mock Interview Day (16/36, 44%), 26% of the students who did not participate felt participation in this event would have better prepared them for their residency interviews. (83 words)

Conclusion: We identified several areas of improvement, most notably regarding the Mock Interview Day. (13 words)

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: LS, JF, SE: Nothing to disclose. (39 words)
Evaluation of Time in Motion Study Results to Optimize Pharmacy Technician Workflows
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Student
Not previously presented

Background: Re-evaluation of pharmacy operations productivity is critical for the maintenance of an optimal staffing model. Continual optimization of the staffing model allows the pharmacy department to work efficiently, deliver high-quality patient safety and care, and maintain a sustainable business model in which personnel resources are used effectively. Data collection specific to this purpose requires the identification of daily tasks, and the standard amount of time it takes to complete said tasks.

Objectives: Examine the minimum time required for the completion of standard tasks by inpatient pharmacy technicians and assess the implications to a staffing model.

Methods: Data collection commenced over a period of two weeks. All data time stamped via inpatient dispensing technology was retrospectively collected. All other activities were manually recorded by direct observation and the use of a basic stopwatch. All tasks performed more than once per shift were recorded at least three times and averaged.

Results: The standard amount of time required to adequately complete daily tasks was accurately measured. The data collected also unveiled areas in which multiple tasks could be streamlined into one position, and proved that the inpatient pharmacy required less FTE’s to operate just as efficiently.

Conclusion: The Time-in-Motion Study established a time standard for each inpatient pharmacy operational workflow task. This data allowed our pharmacy leadership to calculate the minimum necessary technician staffing requirements for each operational role. The results of the study are currently being deployed as a strategy to optimize the inpatient pharmacy technician staffing model.

Disclosures: All authors have nothing to disclose.
HIV-TB Co-Infection Among Pregnant Women and Birth Outcomes
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Pharmacy Student Category
Not previously presented

Background: Tuberculosis (TB) and Human Immunodeficiency Virus (HIV) represent a major public health importance among pregnant women worldwide. In the United States, substantial disparities exist among racial characteristics and the disease burden; African American woman are predominately impacted. It is also notable that two infections combined lead to amplified maternal complications.

Objectives: To examine temporal trends in the occurrence of TB-HIV co-infection amongst childbearing women

Method: This retrospective quantitative study examined in-patient hospital discharge within the United States from January 1st, 2002 through December 31st, 2014. The compilation of the dataset was performed using The National Inpatient Sample (NIS) database, which was made available by the Healthcare Cost and Utilization Project (HCUP). The cohort consisted of pregnancy-related inpatient hospitalizations of women of ages 13-49 years in which were identified using a “NEOMAT” variable. This NEOMAT indicator identifies maternal diagnosis records on the basis the 9th revision, International Statistical Classification of Diseases and Related Health Problems medical diagnosis codes (ICD-9 CM) for complications of pregnancy, childbirth, and the puerperium.

Result(s): Not applicable.

Conclusion(s): Roughly 57 million health records were analyzed. Trends indicated increased prevalence of HIV and TB disease burden amongst minority and lower socioeconomic status woman. HIV-positive pregnant women were significantly more likely to develop Tuberculosis with increased likelihood of hospital stay and substantial financial burden on healthcare system.

Disclosure(s): This project was funded through the Health Resources and Services Administration as an educational opportunity for qualifying students at Texas Southern University. The grant is titled: Maternal and Child Health Student Training for Academic Readiness and Success (MCH STARS) and was lead under the direction Hamisu Salihu, M.D., Ph.D. of Baylor College of Medicine.
Background:
Many publications have concluded that there is a growing need for additional training for pharmacists in patient communication skills. However, there are lack of studies on development of patient communication skill training and the effort to incorporate this aspect into college of pharmacy curriculum.

Objective:
This pilot project focused on providing 1st to 3rd year pharmacy students a practical process to strengthen their confidence and competence in communicating with patients via a set of questions students were asked during blood pressure and finger stick glucose measurements.

Methods:
A weekly health screening booth was set in a market center attended mostly by local citizens from a low economical background. Pharmacy students were selected through an application process and trained before the onsite visit. Students were required to attend at least one onsite visit with the goal of recruiting patients to be screened for diabetes and hypertension, and were expected to use the set of questions provided to facilitate their communication with the patients. A post-attendance survey was completed by the students afterwards.

Result:
The students showed a positive response in building confidence and competency in their patient communication skills through the use of a set of questions during health screenings.

Conclusion:
Health screenings are a good opportunity for pharmacy students not only to become competent in the use of point of care devices, but also for students to enhance their patient communication skills via a number of methods including a predetermined set of questions to ask the patients.

Disclosures:
LK, KTT, JFC: Nothing to disclose
An evaluation of two years of survey responses from incoming fourth year pharmacy candidates: career and residency interests.

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Pharmacy Student Category
Not previously presented

Background: For pharmacy students entering their fourth year of their Doctor of Pharmacy degree program, future career paths and post-graduate opportunities are an area of major concern. We conducted a survey to evaluate areas such as what career path students plan to pursue after graduation, interest in and related characteristics of residency programs, interest in the Phase II match, geographic preference, strengths, weaknesses, and desire for faculty mentorship.

Objective: The purpose of these surveys was to evaluate interests, concerns, and influencing factors of fourth year pharmacy students as they enter the residency application process.

Methods: An online survey was completed by fourth year students from Texas Tech University Health Sciences Center School of Pharmacy.

Results: A total of 106 (2016) and 54 (2017) students participated. For the class of 2017: 53% reported wanting to pursue post-graduate residency training, and 84% planned to participate in the Phase II match. Interest in critical care increased for the class of 2017, while interest in managed care decreased. 77% of respondents of the Class of 2017 prefer a residency program with an area of emphasis, while 45% prefer a program that offers early commitment for a PGY2 Program.

Conclusion: We identified key characteristics of programs and interests of TTUHSC students regarding the residency application process. Based on the interests and needs of our students, we plan to tailor informational residency sessions and skill development for our fourth year pharmacy students.

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: JH, LS, SP: Nothing to disclose.
Analysis of Medication Therapy Management Conducted by Student-led Community Outreach: Know Your Medicine
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Student
Not previously presented

Background: The elderly population utilizes the highest number of medications and have difficulty adhering to medication regimens. As medication experts, pharmacists can address these issues via Medication Therapy Management (MTM). MTM involves assessing a patient’s medication regimen to identify and suggest strategies for resolving medication-related issues. Know Your Medicine (KYM) aspires to offer this service via student pharmacists. Founded in 2012, KYM is a student pharmacist-led community outreach program that provides MTM to the south-central Texas regions.

Objectives: The objective of this poster is to educate seminar attendees about the results of previously held KYM events in the south-central Texas area regarding patient's medication reviews.

Methods: The KYM sessions included MTM reviews during which data about patient’s demographics, medical conditions and medications was collected via our medication review form. Additionally, KYM conducted a pre/post survey with each patient for quality improvement.

Results: KYM participants were shown to use multiple medications to help treat and control multiple chronic illnesses. After participating in the MTM reviews, patients felt their knowledge of their medication regimen increased. In the past academic year, KYM patients’ pre vs post event responses (10-point scale) revealed increased confidence in the information pharmacy students provide about their medications (8.05 vs. 8.75) and increased knowledge about their medications (6.77 vs. 8.15).

Conclusions: Student pharmacists can provide patients with the MTM review service that allows the patient to take control of their health by gaining knowledge of the medications they are taking to help increase medication outcomes.

Disclosure: TM Patek is the KYM Research Committee Jr. Chair and worked with R Belmontes in conducting the research and creating this poster. Belmontes is the KYM Research Committee Chair. Together, they submit this abstract to inform the seminar attendees about the results and findings of this student-led community outreach program at the University of Texas College of Pharmacy. J Munoz is the current Co-Chair of KYM. CG Amuneke-Nze resides as the Student Council advisor to KYM. ML Kiger resides as the faculty advisor to KYM.
Quantification of Xanthine and Hypoxanthine as Potential Cancer Biomarkers in Human Serum Using LC-MS/MS
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Not previously presented

Background: Metabolomics studies have shown potential associations between purine concentrations in human serum and various cancer incidences.

Objective: To report a simple, rapid, and sensitive LC-MS/MS method capable of quantifying the levels of unbound xanthine and hypoxanthine in human serum.

Methods: Xanthine and hypoxanthine were extracted from serum samples using acetonitrile. Separations were carried out on an ACE Excel 2 Super C18 column (50 x 2.1 mm, 2µm). The mobile phase was a gradient prepared with water with 0.1% FA in water (solvent A) and 0.1% FA in acetonitrile (solvent B). LC-MS/MS analysis was carried out on an API 4000 Q Trap triple-quadrupole LC/MS/MS system with a Turbo Ion Spray ion source (ABSciex). Surrogate blank serum, coupled with stable isotope hypoxanthine 13C5 as internal standard, were used for generating standard curves for both xanthine and hypoxanthine. Mass detection was performed under negative ionization electrospray to detect the specific precursor to product ion transitions m/z 150.9 → 108 for xanthine, m/z 134.9 → 92 for hypoxanthine, and m/z 139.9 → 109.9 for the internal standard.

Results: The linearity of the calibration curves was established over the concentration range of 0.25 - 25 µg/mL with correlation coefficient values greater than 0.997. The mean values of slopes and intercepts are 0.00537 ± 0.00032 and 0.459 ± 0.353 for xanthine and 0.00541 ± 0.00006 and 0.452 ± 0.39 for hypoxanthine. Our study showed that the ACE UPLC column had high specificity and selectivity for separating xanthine and hypoxanthine from serum components. The assay was successfully applied for the quantification of human serum xanthine and hypoxanthine levels.

Conclusion: We report here, a simple, specific, and reproducible LC-MS/MS method for the quantification of xanthine and hypoxanthine in human serum as a potential screening biomarker for cancer.

Disclosures: All Authors of this presentation have nothing to disclose.
Developing Bedside Delivery of Discharge Medications to Improve Transitions of Care for Skilled Nursing Patients
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Background: University Place (UP) is an adult independent-living community with transitional rehabilitation, long term care, and skilled nursing. UP is part of the Post-Acute Care Network of the Memorial Hermann Health System. It is well established in literature that transitions of care (TOC) programs have been shown to impact hospital readmissions which in turn reduces costs through higher reimbursement from Centers for Medicare and Medicaid Services (CMS).

Objective: To evaluate the steps necessary to implement a bedside delivery program. To evaluate the resources needed to execute bedside delivery of discharge medications program. To develop quality metrics to evaluate impact of program.

Methods: Literature review of the impact and role of bedside prescription delivery. Evaluation of current policies and procedures for areas of improvement. Identification and assessment of outpatient pharmacies available to enact bedside delivery. Crafting a new policy to include new improvements to patient discharge. Staff training regarding the new process and policy.

Results: An outpatient pharmacy service was identified that could provide valuable services such as prior authorization assistance, durable medical equipment, and timely delivery of medications. The drafting of policy to include the new services and implementation took less than 3 months.

Conclusion: An opportunity was identified to improve TOC in the skilled nursing facility setting though implementing a discharge program with bedside delivery of medications. There is evidence in literature that effective transitions of care can impact hospital readmissions which in turn affects reimbursement rates from CMS and reduces overall costs.

Disclosures: All authors have nothing to disclose.
Applying Self-Awareness to the Personal and Professional Development of Students in the Professional Program Leading to the Doctor of Pharmacy Degree: A Qualitative Study
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Student Education
Not previously presented

Background: The Accreditation Council for Pharmacy Education (ACPE) standards describe a list of educational outcomes deemed essential to the contemporary practice of pharmacy in a healthcare environment for holistic patient well-being. The fourth standard including personal and professional development states, “the graduate is able to examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions, that could enhance or limit personal and professional growth.” Research has been conducted on metacognition, self-regulation, and self-regulated learning; however, several unanswered questions regarding self-awareness and its assessment remain. This research study was conducted so as to enhance understanding in this area, and lead to solid implications for educational policy and practice.

Objective: The purpose of this phenomenological study is to determine how pharmacy students develop self-awareness and how to best assess it as part of their personal and professional development.

Methodology: A qualitative research study design was utilized in this study to gain a deeper understanding of pharmacy students’ development and assessment of self-awareness prior to immersion in the Foundations of Self-Discovery Module within the Foundations of Professional Development (FPD) course curriculum. Ten pharmacy students from The University of Texas at Austin College of Pharmacy that identified as first year students were included in this study. In addition to a pre-interview questionnaire, in-person semi-structured interviews were conducted to gather information on how they identified, addressed, and utilized self-awareness to grow both personally and professionally.

Results: Four composite themes emerged from the data: self-reflection, adaptation, influence, and experience. These themes consist of a compilation of data codes and factors associated with self-awareness. Factors such as family influence and self-evaluation played major roles in shaping these composite themes. Furthermore, these themes help to answer the original research questions: 1) How do pharmacy students identify and address self-awareness? 2) How do pharmacy students utilize their self-awareness to develop professionally?

Conclusion: Expanding the practice of self-reflection in pharmacy education, and ultimately, pharmacy practice is instrumental for improving patient care. By identifying factors that influence students’ development and assessment of self-awareness, targeted efforts can be incorporated to improve educational policy and practice. Utilization of this study’s results as well as expansion of this research to other institutions will only aid in remedying our current system.
Impact of the Supplemental Nutrition Assistance Program on Pharmacy Students’ Attitude Towards Food Insecurity
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Student
Not previously presented at a professional meeting

Background: Food insecurity involves an unreliable access to a sufficient quantity of nutritious food. Texas is ranked 11th in the nation in food insecure households where 1 in 6 Texans have an unreliable access to food. Pharmacists are a critical provider in quality health care, and are in a special position to be a contact point for patients.

Objective: To start a Nutrition Awareness week to engage and educate pharmacy students about food insecurity.

Method: Thirty students from SSHP and SNPhA participated in Nutrition Awareness week. During the three days of the SNAP Challenge, the study participants had to spend a maximum of $4.40 per day on food. A list of pre-survey and post-survey questions were compiled to gauge prior knowledge and receive feedback.

Results: 26 students were surveyed prior to the activities. Most students bought groceries weekly (80.8%), spent more than $50 on food (57.6%) and accessed the store by their own car (73.1%). 30.8% respondents know someone who lives in a food insecure household. Students responded more accurately about the maximum monetary allotment for a family of 4 ($650) (Pre assessment: $486 ± 274; Post-assessment $639 ± 287; p< 0.15) and about what items can be bought on food stamps after the SNAP Challenge.

Conclusion: Food insecurity education may be a valuable tool for educating pharmacy students. Students gained empathy and knowledge about this critical issue. From our data, students developed a better understanding of food insecurity and its prevalence.

Disclosure(s): LM Roccograndi and ND Bhatt are part of the TSHP Student Executive Committee. Funding for the project was graciously provided by UT’s Walgreen’s Diversity Grant.
TSHP- SSEC Abstract

Medication Safety Awareness:
A statewide Initiative to promote safe medication use and disposal

The use of pharmaceutical agents aid in treating acute and chronic illnesses but this benefit can come at a cost when safe methods of using medication are not practiced. Health care providers must ensure safe use of these medications and provide crucial patient education. These essential changes help to avoid unnecessary adverse events, decrease hospital admissions and reduce risk of morbidity and mortality associated with medication errors.

Public awareness campaigns and education are effective ways to address safe practices when using medications to prevent adverse events and to improve patient health outcomes. To accomplish this critical public health goal, Texas chapters of the Student Society of Health-System Pharmacy have continued their statewide initiative to promote safe medication use and disposal by organizing various events across the state to educate and provide resources to the public regarding medication safety.
Evaluation of Medication Adherence of Diabetic Patients of South Texas
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Student Category
Not previously presented

Background: Diabetes is a prevalent chronic disease in South Texas. There is a high rate of poor adherence in this medically underserved region due to various reasons and barriers. This leads to an overall decrease in patient quality of life in addition to increased costs for the patient and also the health care system.

Objective: The primary objective is to evaluate the various explanations for poor medication adherence and investigate new and different strategies to apply to this specific patient population.

Methods: The demographic of South Texas was collected through the CDC, Texas Department of State Health Services, Rio South Texas, and South Texas Diabetes Initiative websites. A literature search through PubMed using key terms “diabetes”, “underserved”, and “adherence” was conducted. The articles were then analyzed to determine if the results were applicable to underserved Hispanic diabetes patients.

Results: Nine articles from the search were able to be utilized in our evaluation. Of the articles, one study had previously assessed medication adherence barriers in underserved diabetes patients in Texas. The outcomes of this article were used as a starting point to understand the adherence levels of Texas diabetic patients. The main barriers to proper adherence were costs, no refills, or forgetting.

Conclusion: Pharmacists are the last health care professional to interact with the patient and thus can help improve medication adherence by applying these novel strategies that are better catered to this specific population.

Disclosure – Nothing to disclose.
INHIBITORY ACTION OF MITOCHONDRIAL-TARGETING HYDROGEN SULFIDE RELEASING COMPOUNDS ON PORCINE ISOLATED IRIDES

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Pharmacy Student Category

Not previously presented

Background: Elevated Intraocular Pressure (IOP) is the major risk factor for glaucoma, the second leading cause of irreversible blindness worldwide. In spite of the diverse therapeutic options available for management of elevated IOP, there still remains need for better agents. Evidence from our laboratory demonstrates that hydrogen sulfide can lower IOP and exert pharmacological effects on ocular tissues.

Objectives: To investigate the pharmacological actions of novel mitochondrial-targeting H2S releasing compounds (AP39, AP123, and RT-01) on ocular smooth muscles involved in the maintenance of IOP.

Methods: Isolated porcine ciliary muscle strips were set up in organ baths containing oxygenated Krebs buffer solution maintained at 37°C. Muscle strips were set to an initial resting tension of 0.15 g and longitudinal isometric tension was recorded via a grass FT03 force displacement transducers and analyzed. Pharmacological actions of H2S compounds were assessed in the presence of tone induced by submaximal concentrations of carbachol.

Results: The mitochondrial-targeting H2S-relasing compounds, AP 39(1 nM-10mM), RT-01 (1 nM-10mM) and AP123 (1 nM-10mM) elicited relaxations of carbachol-induced tone. The rank order of activity was (IC50): AP39, 50 nM (n = 10); RT-01, 100 nM (n = 4); and AP123, 300 nM (n = 4). Likewise, the non-mitochondrial-targeting H2S donor, ADT-OH (1 nM – 10 µM) caused a relaxation of porcine irides with an IC50 of 50 nM (n = 8).

Conclusion: H2S releasing compounds and their control counterpart can elicit relaxation of isolated porcine irides, offering an attractive target for the management of elevated IOP and potential glaucoma treatment.

Disclosure(s): Nothing to disclose.
Pharmacogenomic Determinants of Concomitant Opioid Use in Chronic Low Back Pain Patients: A Preliminary Review

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Nicole Phillips, PhD

Abstract
Purpose: The aim of this study is to provide pharmacogenetic information on opioid user profiles to better understand the inter-individual variability in drug response and provide guidance to healthcare providers. One of the major mechanisms of opioid metabolism is through hepatic cytochrome P-450 CYP2D6 enzymatic activity which predominately converts codeine to morphine and then morphine-6-glucuronide leading to therapeutic analgesic effects. The association of the CYP2D6 metabolizer phenotypes with formation of morphine via this pathway is well known. Codeine serves as a Prototype for Opioid Metabolism and Analgesia. The “extensive metabolizer” phenotype represents patients who experience normal analgesia at recommended opioid doses. However, the three other CYP2D6 metabolizer phenotypes present clinical challenges in opioid prescribing. At one end of the spectrum, “ultra-rapid metabolizers” are at high risk of opioid toxicity due to increased conversion of codeine to morphine. Alternatively, “poor metabolizers” lack opioid response because of decreased conversion to morphine. However, such patients may paradoxically experience opioid side effects if the dose is increased in efforts to achieve analgesia. Finally, “intermediate metabolizers” may not achieve adequate analgesia at recommended opioid doses and must be closely monitored to balance potential benefits and risks of therapy. Pharmacokinetic and pharmacodynamic studies of opioids such as tramadol and oxycodone similarly show that these drugs depend on CYP2D6 for conversion to active metabolites responsible for analgesia.

Methods: DNA Genotyping using Scanner (Illumina) and precision medicine array. CYP2D6, CYP2C9 and CYP2C19 SNP panels, and the genotypes for all SNPs within these three genes are specifically mined from the microarray data for the purposes of risk characterization and cohort grouping.

Results/Conclusions: Patients enrolled in the PRECISION TEXAS Pain Registry provide updated data to the baseline information. Selected baseline characteristics of the 40 registry patients enrolled during the first three months of low-intensity operation are available, including scores for pain intensity (11-point numerical rating scale), back-specific functioning (Roland-Morris Disability Questionnaire), quality of life (Patient-Reported Outcomes Measurement Information System-29 [PROMIS-29]), pain catastrophizing, and pain self-efficacy.
Background: In October 2014, the Drug Enforcement Agency rescheduled Hydrocodone Combination Products (HCPs) from schedule III to schedule II. Prior studies demonstrated that increased regulation of HCPs has resulted in an increased prescribing of Schedule III opioids, but no such study has been done using Texas Medicaid data since the rescheduling.

Objective: This study describes current trends in opioid and analgesic prescription claims under Texas Medicaid.

Method: We retrospectively analyzed Texas Medicaid prescription claims data of enrollees 18-64 years old who filled analgesic prescriptions between 4/1/2013 and 4/30/2016 (the month of rescheduling, 10/2014, was excluded). Texas Health and Human Services Commission provided this data. We created trend graphs and calculated percent change of prescription claims by type.

Results: 5,634,992 analgesic prescriptions were filled; 67.4% (n=3,799,787) were opioid narcotics. There were 76,739 HCP prescriptions/month for 10,135 patients in the 18 months pre-rescheduling, and 30,547 HCP prescriptions/month for 1,295 patients in the 18 months post-rescheduling. This represents a 60.2% decrease in HCP prescriptions. The mean number of HCP prescriptions/patient increased from 7.6 pre-rescheduling to 23.6 prescriptions post-rescheduling. While non-opioid analgesic prescriptions and other schedule II prescriptions increased slightly, there was a sharp increase of 84.3% in the number of non-schedule II opioid prescriptions.

Conclusions: The increase in non-schedule II opioids prescriptions post-rescheduling did not balance the decrease in HCP prescriptions. The shift possibly resulted from reduced prescriptions for short-term HCPs since mean prescriptions/patient increased while the total number of patients dramatically decreased.

Disclosures: JY Yang, KM Richards, and KA Lawson have no disclosures.
**Effect of incretin mimetics on cognitive function in Type 2 Diabetes Mellitus**

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Student Poster  
Not previously presented

**Background:** With an increase in prevalence of Type 2 Diabetes Mellitus (T2DM) and Alzheimer’s Disease (AD), a link between T2DM and cognitive impairment has been observed. Recent pre-clinical studies have shown incretin mimetic agents, glucagon-like peptide-1 (GLP-1) agonists and dipeptidyl peptidase-4 (DPP-4) inhibitors, used to treat T2DM, possess neuroprotective properties leading to a decreased risk of cognitive impairment.

**Objective:** The purpose of this research is to describe the relationship between the use of incretin mimetics in T2DM and cognitive function measured through the Folstein Mini–Mental State Examination (MMSE).

**Methods:** A retrospective chart review of patients at the University of North Texas Health Center for Geriatrics was completed. Patients were included if they were diagnosed with T2DM and had a documented MMSE score. Patients were further classified into two groups: patients who had received a prescription for incretin mimetics and those who had not. After separating based on incretin mimetic therapy, the mean MMSE scores of both populations were determined.

**Results:** A total of 604 patients were identified for study inclusion, with 42 patients being treated with incretin mimetics. The mean age was 77.1 years and 68.7% were female (n=415). The mean±SD MMSE score for all patients was 24.88±5.93. Patients using incretin mimetics had a significantly higher mean MMSE score as compared to the non-incretin mimetic group (p=0.006, 26.41±4.16 vs. 24.44±6.01, respectively).

**Conclusions:** The findings of this research highlight the potential benefits of novel incretin mimetics on preserving cognitive function, however more studies are needed to confirm a causal relationship.

**Disclosures:** All 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.
Title: Pregnancy outcomes among women with sickle cell disease and HIV

Authors: Javon Prophet, Kalifa Kelly Farida Allam, Julian Domingo Helen Yemi, Xaviera Djoko, Breana Dockery, Javon Artis, Manvir Kaur, Omonike Olaleye Ph.D and Hamisu Salihu M.D., Ph.D

Objective: Sickle cell disease (SCD) is a genetic disorder that affects red blood cells in the body. The racial group that is predominantly affected are people of African descent. Women with sickle cell anemia are reported to be at a higher risk for maternal complications and hospital costs. In this study, we evaluated the level of hospital admission costs among pregnant women with both SCD and HIV in the United States.

Methods: A retrospective analysis of all inpatient hospital discharges from January 1, 2002 through December 31, 2014 was performed using the National Inpatient Sample (NIS, formerly the Nationwide Inpatient Sample), the largest publicly available all-payer inpatient database in the US, made available by the Healthcare and Cost Utilization Project (HCUP). To create the sample annually, HCUP employs a two-stage cluster sampling design that first stratifies all nonfederal community hospitals from participating states by five major hospital characteristics: rural/urban location, number of beds, geographic region, teaching status, and ownership. We applied appropriate ICD 9 codes to identify pregnant women with a diagnosis of both HIV and SCD. We then estimated hospital-associated costs using a cost-estimator that was constructed and refined for cost estimation of health expenditures in the maternal and child health population.

Results and Conclusions: A total of 222 pregnant women had both SCD and HIV. Both morbidity and hospital costs were significantly and independently associated with SCD and HIV with substantial increase when both conditions were present.
Introduction: The disparities of infectious diseases are associated with the differences in demographic factors. Yet, the disparities of the growing incidence of SSTIs are unclear.

Objective: To characterize SSTI incidence at health care settings, and its outpatient antimicrobial prescriptions in 2014 based on demographic factors

Methods: This was a cross-sectional analysis of nationally representative data from the Medical Expenditure Panel Surveys (MEPS) in 2014. Population based SSTI rates were defined as the annual number of SSTI divided by the overall US civilian non-institutionalized population per 10,000 persons, and were reported based on race/ethnicity, regions and ages.

Results: Population based SSTI rates in 2014 among racial-ethnic groups were greatest in Blacks (10.4) followed by Whites, Asian/Native Hawaiian/Pacific Islander and Hispanics. The SSTI incidence rates were greatest in the Midwest (15.1) followed by the West (8.1), the South (7.6) and the Northeast (6.7). The highest SSTI incidence rates occurred in the elderly (21.9) followed by adults and children and adolescents. A total of 4.2 million outpatient antimicrobials for SSTIs was prescribed in 2014. Antimicrobial prescription rates for SSTIs were greatest in Whites (787) followed by Blacks, Alaskan Native/American Indians and Hispanics. The West had the highest outpatient prescription rate for SSTIs (61) followed by the South, the Midwest and the Northeast. Antimicrobial prescription rates were highest among children and adolescents (58) followed by adults and elderly.

Conclusion: In 2014, the overall SSTI incidence rates were highest in Blacks, the elderly and the Midwest whereas the antimicrobial prescription rates were highest in White, the children and adolescents and the West.

Disclosures: The authors declare nothing to disclose.
Technician
Streamlining Rural Clinic Medication Inventory Management
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Technician
Not previously presented

Purpose

To avoid waste and decrease cost of medications that are kept in a Rural Health Clinic (RHC). Also formulate a stocking/replenishment process that is efficient and formulary-based.

Background

The RHC is located on the campus of a critical access hospital (CAH). Historically, medications for in-clinic use not formulary-based and were directly purchased by clinic staff from the hospital’s wholesaler. In doing so, they would have inefficiencies: large quantities of medication that would expire, no process for inventory sharing/stock rotation.

Method

A pharmacy technician driven process of RHC in-clinic medication inventory management was implemented in June of 2016. All medication purchases, inspections, and stock rotation were assumed by the CAH-based technician. Inspections included actual inventories and looking at expiration dates. Inventory for larger package sizes were shared. Short-dated clinic inventory was rotated to fast-mover hospital areas to avoid waste. Cost savings and avoidance were calculated based on baseline inventory costs.

Cost and Savings

The $16,560.99 is the total cost of what the clinic was spending on each medication from the wholesaler (baseline). The new cost after implementing our plan, the clinic should only have to spend about $7,945.44 in a 6 month to a year span. There was a total projected savings of $8,422.

Results and Conclusion

A pharmacy technician-driven inventory management process was associated with reduced medication waste, and improved efficiencies of inventory. There may be financial and operational opportunities for hospital-based ambulatory clinics to leverage pharmacy resources to improve and reduce costs associated with in-clinic used medication inventories.
Benefits of a Discharge Technician in a Bone Marrow Transplant Setting
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Background: Transitions of care is defined as actions that ensure safe coordination and continuity of care for patients as they transfer between various locations and levels of care. Within the bone marrow transplant population, medications such as antifungals and immunosuppressant’s are notorious for its prior authorizations and high co-payments. This can delay discharge, increase length of stay, or cause a lapse in therapy if the patient is unable to obtain their transplant medication.

Objective: The purpose of this program is provide assistance to patients with prior authorizations and copay assistance programs for high cost transplant medications at the time of discharge.

Methods: Initially, a patient with an anticipated discharge is identified. The technician will print out the medication list and obtain a patient history. From this history, medication additions, omissions, and discrepancies are identified and medication list is updated. New medications from inpatient stay are sent to the pharmacy for processing. If a prior authorization or copay assistance is required, it is completed by the technician; once approved, the pharmacist counsels patient.

Results: Over a nine month period, the transition of care technician completed ninety prior authorizations with a 91% approval rating. Within a three month period, $4,514.30 were saved for patients through co-pay cards, and $9,749.88 with co-pay assistance program.

Conclusions: The implementation of a transition of care technician has helped ensure a patient will not face barriers to obtaining medications upon discharge and ensure patients will have their medications with them at the time of discharge.

Disclosure: The author has nothing to disclose
Increasing medication availability in automated dispensing cabinets
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Technician Category
Not previously presented

Background: Automated dispensing cabinets increase efficiency of medication dispensing and provide real time availability of medications to healthcare personnel and patients while allowing for charge capture for facilities that charge on dispense.

Objectives: The objective of this process improvement project was to improve the medication availability on the nursing units, decrease medication requests and increase nursing satisfaction and pharmacy satisfaction with medication availability while maintaining optimal inventory turns.

Method(s) or Procedure(s): A process was created for identifying the medications ordered and not loaded in Pyxis machine. This process was shaped for our 26 profile Pyxis Medstation® 4000 units, where specific drawers were assigned to load new patient medications. This allowed for technicians to load vials, cups, syringes and unit dosed medications within the specific drawers multiple times per day.

Result(s): The medication availability measured by percent of doses dispensed from pyxis was compared before and after the new process roll-out. The total percent of doses dispensed from Pyxis was increased by atleast 5%. There was no impact to the overall inventory turns for the pharmacy department with the inventory turns being at 12 (July 2016).

Conclusion(s): With the new process for ordered medication not loaded in Pyxis machines, there was increased availability of medications from Pyxis by 5%, improved nursing satisfaction, and decreased medication requests for missing medications.

Disclosure(s): The authors have nothing to disclose.
PGY1
Assessing Federally Qualified Health Center Providers Need for Clinical Services Provided by Community Pharmacists

Background: Community pharmacists can play a key role in managing patients’ health by providing them with medications, counseling, point of care testing, addressing adherence issues, and more. What is unknown is the clinical role other health care providers would like to see community pharmacists.

Objective: The purpose of this project was to conduct a needs assessment to identify the clinical role FQHC based health care providers want community pharmacists to play in the care of patients.

Methods: A survey is emailed to the Federally Qualified Health Centers (FQHCs) in Texas to be completed by all healthcare providers. A Community Pharmacist who has a relationship with that FQHC emphasizes the importance of taking the survey either through email, phone call, or walk in.

The health care providers will provide demographic information such as their health care discipline, years of practice, and their specialty. The providers will be asked to identify the clinical services they believe a community pharmacist can provide, which clinical services will benefit their practice and record any additional services they would like to see provided by a community pharmacist.

The results will be collected and descriptive analysis will be conducted to assess trends of popular and unpopular services among the providers. The trends differences between disciplines will also be assessed. IRB approval has been submitted and is pending.

Results: After 7 responses, and some individuals representing the providers in their FQHC, Medication Therapy Management was selected 71.4% of the time. It was followed by Medication Adherence Counseling at 42.9%, then Medication reconciliation, adverse effect, and administration counseling at 28.6%.

Other services that were selected were Managing therapeutic interchanges, point of care testing for chronic diseases and A1C, Vaccinations, refill management, providing disease state management education, managing disease states under CPA, and managing transitions of care at 14.3%.

100% of providers believed community pharmacists can see patients at their practice to optimize medication therapy. Most providers had worked with a Clinical pharmacist before.

Discussion: Medication Therapy Management and Adherence Counseling remain the most popular areas where community pharmacists can make impact as perceived by providers. Interventions that improve patient care in these areas will be most welcome to providers in FQHCs. The sample size of providers is very small. More responses are needed to create an accurate assessment of clinical needs that community pharmacists can provide.

Conclusion: This data shows evidence that community pharmacists can focus on interventions that improve medication therapy management and adherence counseling in order to provide
clinical care to patients. However, the number of providers who responded to the survey was extremely small. Need more providers to take the survey before an accurate conclusion can be made.
Impact of a Pharmacy-Focused Training Program on Pharmacist Confidence in Code Blue Response
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Resident/Fellow/Post-Graduate PGY-1
Research not previously presented

Background: Currently, Advanced Cardiovascular Life Support (ACLS) certification is not required for staff pharmacists who respond to Code Blue emergencies at our institution. Due to the variable Code Blue experience and training among the staff, a need to standardize the education prior to pharmacist participation was identified. Additionally, a formal needs assessment was conducted. Results showed a lack of knowledge and competence in the management of cardiac arrest and a lack of confidence in preparing the medications found on the crash cart in an emergency situation. Based on this feedback, the Division of Pharmacy developed a focused training program that includes a self-study, online computer-based training in combination with a hands-on skills lab.

Objectives: To increase pharmacists’ mean confidence scores from pre-module to post-skills lab

Method(s) or Procedure(s): The formal Code Blue education process includes a self-study, online computer-based training followed by participation in a hands-on skills lab within fourteen days. The online module reviews the pharmacists’ role as a member of the Code Blue team, the ACLS algorithms, and use and preparation of medications for management of cardiac arrest and other emergencies. Pharmacists must complete a pre- and post-test prior to the skills lab. The skills lab focuses on application of these principles in a simulated Code Blue response. Pharmacists must successfully respond in two of three clinical scenarios to achieve competence.

Qualtrics surveys were administered before completion of the online module, before the skills lab, and after the skills lab to assess confidence (using a 5-point Likert Scale) in four areas essential to Code Blue response.

Result(s): Increases in confidence mean and mode were seen across all four areas essential to Code Blue response. All 26 participating pharmacists successfully passed the final competency test in the hands-on skills lab. Mean pharmacist confidence for response to a Code Blue event increased from 2.9 to 4.2 and the mode increased from 3 to 4 as a result of completing the computer-based training and hands-on skills lab. Of the 26 participants, 25 (96%) reported feeling somewhat confident or very confident in applying knowledge and skills learned in the training program.

Conclusion(s): The use of a multi-step training program for pharmacist code blue response involving an online training module and active learning skills lab resulted in a mean increase in confidence scores and can be used to improve pharmacist confidence in code blue participation.

Disclosure(s): DV Smith has nothing to disclose. SG Gautreaux has nothing to disclose. AB Finnigan has nothing to disclose. MQ Ma has nothing to disclose. MA Mendoza has nothing to disclose.
Background:

The healthcare industry has been tasked with improving efficiency and reducing costs while still maintaining optimal patient outcomes. One way that the pharmacy department can contribute to expense reduction is through reducing waste. Discarded intravenous preparations represent a potentially significant dollar value. Identifying the causes of waste and changing relevant processes could help reduce waste and increase institutional efficiency.

Methods:

The pharmacy first began barcode scanning intravenous preparations returned to the pharmacy prior to discarding them. Simultaneously, the pharmacy generated reports about each of the discarded preparations using Baxter’s DoseEdge Pharmacy Workflow system. The information included in these reports included the drug, certain National Drug Code (NDC) numbers, quantity of drug and fluid used in preparation. An Excel spreadsheet was created to fully utilize the data in the DoseEdge report that combined the DoseEdge report with institutional purchase history and reconciling unit and package NDC numbers by utilizing the FDA’s NDC directory as a central reference. By combining these three data sources, ranked lists of wasted intravenous products by quantity and value were generated, identifying starting points from which to begin a waste reduction program within the pharmacy. The spreadsheet tool created is flexible enough to be utilized at other institutional pharmacies within the hospital network.

Results:

The costs associated with expired and discarded drug waste have been reduced since the beginning of this project. This has been achieved through a combination of general pharmacy workflow initiatives and targeted changes directed at high cost drugs such as vasopressin.
Disclosure: 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 this presentation:

Christian Tellinghuisen: Nothing to disclose
Evaluation of rapid intravenous to oral conversion of antibiotics in the emergency department
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PGY-1 Resident
Not previously presented

Background: As awareness of antibiotic overuse increases, many facilities look for strategies to decrease use and identify areas to improve antimicrobial stewardship. Many of these tactics include pharmacist review of broad spectrum antibiotics, automatic stop dates on certain antibiotics, and de-escalation tactics. These strategies often occur once patients have been admitted to the floor. The purpose of this study will be to see if patients who receive PO medications are able to avoid admittance and discharge sooner.

Intravenous (IV) medication administration, while popularly used in the ED, does not come without risks. IV therapy can result in complications such as, phlebitis, extravasation injury thrombosis, and local or systemic infections. Opting for IV therapy can also prolong the duration of inpatient stay and increase the financial burden not only to the patient but also to the healthcare system. Per IDSA guidelines, oral antibiotics can be used as initial therapy if the patient is deemed appropriate. The appropriateness is not well defined per the IDSA guidelines for many infections.

Objective: The objective of this poster is to educate pharmacy practitioners and seminar attendees about opportunities to enhance their antimicrobial stewardship program and decrease emergency department (ED) length of stay times.

Methods/Procedures: Patients meeting inclusion criteria will be identified by electronic medical record system, Epic. For patients that meet criteria, a best practice advisory (BPA) will alert the provider of the risks of intravenous antibiotic and recommend an oral equivalent. Data will be collected retrospectively. Emergency department length of stay will be evaluated for events in which the BPA was followed and events in which the BPA was overridden.

Results: Not applicable

Conclusions: Pharmacists are key players in all antimicrobial stewardship programs. This project hopes to identify an opportunity within the emergency department for improved antimicrobial stewardship and decreasing length of stay.

Disclosures: none
Impact of implementation of an automated dispensing cabinet (ADC) profile dispense configuration on potential medication errors in the emergency department
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PGY1 Resident Presentation

Background: The Joint Commission (TJC) and the Institute for Safe Medication Practices (ISMP) both support the prospective review of medication orders by pharmacists to optimize medication safety. This standard of care is not yet universally adopted in emergency departments across the nation.

Objective: The objective of this study is to determine if the implementation of an ADC profile dispense configuration, requiring pharmacist medication order review, is associated with a change in potential medication errors, defined as the wrong medication warning event rate at the time of bedside medication barcode scanning.

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

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

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

Disclosure(s): 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.
Background: Currently there are two primary methods of delivering intramuscular epinephrine for the treatment of anaphylaxis in the inpatient hospital setting; injection via an auto-injector or withdrawing from a vial or ampule using a traditional syringe and needle.

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

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

Results: Data collection is ongoing.

Conclusion: To be determined.

Disclosure: All authors have nothing to disclose.
Safety of Epinephrine Auto-Injectors for Anaphylaxis in the Hospital Setting
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Resident/Fellow/Post-Graduate (PGY1)
Not previously presented

Background: Currently there are two primary methods of delivering intramuscular epinephrine for the treatment of anaphylaxis in the hospital setting; injection via an auto-injector or withdrawing from a vial or ampule using a traditional syringe and needle. Each method of injection imposes various risks and benefits with respect to cost and potential for medication errors.

Objective: To evaluate the impact of using epinephrine vials versus epinephrine auto-injectors on epinephrine medication error rates. We hypothesize that use of vials is not inferior to use of auto-injectors for anaphylaxis management with respect to medication errors in a hospital setting.

Methods: Retrospective chart review was performed using the institution’s EHR of patients who had an order for epinephrine injection from 09/26/2013-11/13/2016. Data collected included demographics, route, diagnosis, and time from order to administration, vitals, glucose, ordered versus documented dose. Adverse reactions collected include dizziness, tremor, arrhythmia, cardiac ischemia, stroke, angina, tachycardia defined as >100 beats per minute, and hypertension defined as systolic >180 mmHg or diastolic >120 mmHg. The primary endpoint was a composite measure of epinephrine medication error frequency. Errors were defined as: incorrect route, dose, treatment delay or documentation in each of the treatment arms, epinephrine auto-injector versus epinephrine vials. Secondary outcomes studied include comparison of individual components of the composite endpoint as well as cost comparison.

Results: Data collection is ongoing. To date we have reviewed 27 cases and only encountered 1 error (route), which could not be confirmed due to lacking documentation.

Conclusion: Pending completion of data collection.

Disclosure: All authors have nothing to disclose.
IMPLEMENTATION AND EVALUATION OF A PHARMACIST-RUN PENICILLIN ALLERGY SKIN TESTING PROGRAM IN THE ACUTE CARE SETTING.

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Not previously presented

Background: The most appropriate and cost-effective antibiotics are sometimes withheld from patients because of a self-reported penicillin allergy. Statistics show that ~10% of patients claim to have a penicillin allergy, where of those, 10% actually have a true hypersensitivity. The alarming prevalence of antibiotic resistance necessitates novel strategies within the antimicrobial stewardship arena to decrease unnecessary antibiotic use.

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

Methods: PAST was performed using an institutionally developed and sanctioned protocol encompassing a skin puncture test followed by an intradermal test if indicated, utilizing standard reagents. Data were collected retrospectively on patients tested between November 2016 and February 201. Data included basic demographics, infection, cultures, histamine antagonist and steroid use, PAST results and adverse effects, and antibiotics utilized empirically and after PAST while inpatient and upon discharge. See exclusion criteria via poster.

Results: An interim analysis of 23 patients was performed, where 96% had a negative penicillin allergy skin test, then 41% were changed to a penicillin or cephalosporin while inpatient and, of those, 55% were continued outpatient. Adverse effects of PAST were limited to test site itching in 26%. No adverse effects were reported for patients in whom penicillin-type antibiotics were utilized inpatient.

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

Disclosure: Authors of this poster 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.
Background: Intravenous (IV) levetiracetam (Keppra®) is an antiepileptic drug (AED) commonly used as a practical alternative in patients with seizures who may temporarily be unable to take oral therapy and may require alternative methods of receiving AEDs. The ideal characteristics of IV levetiracetam include ease of administration, rapid onset of action, and tolerability.

Objectives: To evaluate prescribing practices and tolerability of IV levetiracetam in order to develop effective management strategies for appropriate use at our institution.

Methods: This study is a single-center retrospective chart review of patients who received IV levetiracetam from May 1, 2016 through July 31, 2016 at our institution. A list of patients was obtained from SharePoint Drug Utilization Report Tool and EPIC database.

Results: An interim analysis of IV levetiracetam orders for 102 patients was performed. Primary generalized tonic-clonic seizure was the most common indication for use (29%). The majority of IV levetiracetam (56%) was ordered by Neurology service. Two percent of the orders were not appropriately dosed for renal insufficiency. The most common criteria for inappropriate use was the continued use of IV levetiracetam although patient was able to take oral medication (n=23/102).

Conclusion: Preliminary findings demonstrate opportunities for improvement in the use of IV levetiracetam at our institution. A refresher on proper documentation and dosing of IV levetiracetam especially in renally impaired patients would be beneficial. Pharmacists should also be proactive in ensuring IV levetiracetam conversion to oral levetiracetam when appropriate.

Disclosures: The authors of this presentation have no disclosures concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.
IMPLEMENTATION OF A POST-DISCHARGE, PHARMACIST-LED CLINIC FOR HEART FAILURE PATIENTS.
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Not previously presented

Background: Heart failure prevalence is expected to rise over the next several decades and is associated with high hospitalization and mortality rates. Pharmacists play an important role in the care of heart failure patients. Literature has shown that pharmacists participating as part of a multidisciplinary care team reduce mortality as well as readmission rates in these patients. Continued research is needed to further evaluate the pharmacist’s role.

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

Methods: A protocol-driven clinic staffed by a first-year pharmacy practice resident was implemented for patients recently discharged from a tertiary care center with a diagnosis of heart failure. Patients were referred by a cardiologist and followed weekly for a total of four weeks as an addition to standards of care. Visits were conducted over the telephone and medications were adjusted per protocol.

Results: Four patients completed the four week clinic at time of poster submission, with an additional two patients enrolled. While results are still pending, thus far no patients have died or been readmitted to BSA for any cause at 30 days post-discharge.

Conclusion: Based on interim data of this prospective quality improvement project, the benefit of a post-discharge, pharmacist-led heart failure clinic in reducing readmission rates and achieving target doses of evidence-based medications as compared to standards of care has yet to be elucidated at our facility.

Disclosure: Disclosure: Authors of this poster 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.
Optimization of Intravenous Immunoglobulin Utilization at a Comprehensive Cancer Center
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Not previously presented

Background: Intravenous immunoglobulin (IVIG) is a high-cost drug utilized in a diverse range of settings. At the University of Texas MD Anderson Cancer Center, current practice is to dose IVIG using actual body weight (ABW). Recent evidence suggests that alternative dosing may reduce waste without compromising outcomes.

Objective: The objective of this study was to assess the waste reduction generated through use of alternative IVIG dosing.

Methods: We performed a retrospective analysis of all IVIG doses administered from January 2011-2016 to adults (≥18 years) at MD Anderson. Weight and height were used to calculate prescribed dose (g/kg), ideal (IBW) and adjusted body weight (AdjBW). Three dosing methods were analyzed: AdjBW if ABW >120% IBW (Method 1), AdjBW for all doses (Method 2), and IBW for all doses (Method 3). For each, the difference in the actual and alternative doses were compared to calculate the annual reduction in IVIG usage, cost, and infusion times.

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

Conclusion: Alternative IVIG dosing may represent a source of direct and indirect cost-savings. Reduced doses shorten infusion times and may lead to decreased risk of toxicity.

Disclosure(s): The authors have no relevant relationships to disclose.
Background: Prescription opioid misuse and abuse is a growing public health concern in the United States that is responsible for significant morbidity and mortality; emergency department (ED) physicians are among the top prescribers of prescription opioids. Headache and neuropathic pain are two pain conditions that commonly lead patients to present to the ED. These pain conditions are often initially treated with opioids; however, evidence suggests that this may not be appropriate.

Objective: The objective of our study is to decrease the amount of morphine and hydromorphone used for the treatment of headache and neuropathic pain in patients presenting to the ED at a comprehensive cancer center.

Methods: We performed a retrospective analysis from March 2016 to April 2017, on 168 adult patients (≥18 years) presenting to the emergency center (EC) at The University of Texas MD Anderson Cancer Center with a chief complaint of headache and/or neuropathic pain. Utilization rates of morphine and hydromorphone as well as non-opioids used in these two pain conditions were calculated and analyzed. Evidence-based algorithms were created for the proper management of headache and neuropathic pain utilizing non-opioids and reviewed with all EC providers. Data will be re-analyzed after implementation of the treatment algorithms and education to determine the change in opioid utilization rates for these pain conditions.

Results: Results pending follow-up data collection.

Conclusion: We anticipate that pharmacist-led education will result in a reduction in the amount of opioids utilized in the EC for headache and neuropathic pain without a decrease in pain management.

Disclosure(s): MA St. Pierre has nothing to disclose. KM Toale has nothing to disclose.
Impact of switching patients with diabetes in the ambulatory care setting on insulin vial to insulin pen therapy within a county-owned healthcare system
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Resident/Fellow/Post-Graduate (PGY1)
Previously submitted at 2016 ASHP Midyear Clinical Meeting and Exhibition (Las Vegas, NV)

Background: Compared to insulin vials, insulin pens have been found to improve compliance while providing similar glycemic control.

Objective: To evaluate the clinical outcomes and economic impact of converting patients with uncontrolled diabetes in a county-owned healthcare system from insulin vials to insulin pen therapy.

Methods: Using data obtained from electronic medical records, the primary outcome was to assess the hemoglobin A1c change of patients being converted from insulin vials to insulin pen therapy. Secondary outcomes included evaluating institution cost, assessing medication compliance, comparing dosing and assessing patient satisfaction with the conversion of insulin vial to insulin pen therapy.

Results: An analysis of 23 patients was performed. There was no difference in hemoglobin A1c between insulin vials and insulin pen therapy. The 1 month institutional cost of insulin pen therapy ($0.11) was significantly cheaper than insulin vial therapy ($17.20, p = 0.044). Adherence was no different between insulin vial and pen therapy. Less units of insulin were used daily in pen therapy compared to vial therapy (34 units and 53 units, respectively, p = 0.027). 100% of patients that responded to the satisfaction survey (n = 13) expressed that insulin pens were an improvement over insulin vials.

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

Disclosure: All authors have nothing to disclose.
ASSESSMENT OF THE FEASIBILITY IN IMPLEMENTING A MAIL ORDER PRESCRIPTION SERVICE FOR AN INDIGENT PATIENT POPULATION WITHIN A COMMUNITY HEALTH SYSTEM

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Background: Harris Health System is the third largest community health system in the United States with 15 outpatient pharmacies dispensing over 2.2 million prescriptions per year. Currently, limited data is available regarding success of mail order prescription services within underserved communities and individuals with transient lifestyles.

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

Methods: An electronic medical record was utilized to collect data and MyHealth enrollment information on patients who receive prescriptions at Harris Health System. Additionally, an electronic questionnaire was sent to patients to determine interest in mail order services and assess the accuracy of patient details. Projected expenditures and return on investment were developed and presented for administrative approval.

Results: 154,000 patients received the questionnaire and 6,873 responses (4.5%) were attained in the span of 2 weeks. All multiple-choice questions resulted in a range of 50.30% to 83.18% on the answer “yes”. The only notable difference in response rate associated with prescription pick-up difficulty. (Number of individual answers: 6,867 vs. 4,199)

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

Disclosure: The authors have nothing to disclose.
Comparison of Pharmacists’ vs Nurses’ Utilization of the Ramsay Sedation Scale

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Clinical
Not previously presented

Background: Oversedation in mechanically ventilated patients can have significant negative clinical outcomes; patients may experience increased time to extubation, prolonged Intensive Care Unit (ICU) status and decreased brain function.

Objective: To assessed use of the Ramsay Sedation Scale by pharmacists and nurses and its correlation to variations in sedative dosing.

Method(s): This was a prospective data collection study in mechanically ventilated patients in the ICU. Pharmacists conducted sedation assessments using the Ramsay Sedation Scale (RSS) and compared their scores to those charted by nursing staff. Post analysis, scores were classified into three categories: equal amongst pharmacists and nurses, higher than, or lower than charted by nursing staff.

Result(s): 45 random RSS assessments were conducted in 28 patients with a median age of 65 years (range: 40-82). Pharmacists and nurses charted equal RSS values in 35% of cases. In 51% of the assessments, pharmacists assigned higher RSS scores compared to nurses and lower scores in 13% of the assessments. On average pharmacists assigned a score of 4.6 +/- 1.58 compared to nurses who charted an average score of 3.57 +/- 1.03, with a mean difference of 1.02, 95% CI (0.46-1.58) p=0.0005.

Conclusion(s): The Ramsay Sedation Scale was reliable in 35% of the assessments made by both pharmacists and nurses. Incorporating pharmacists into the RSS assessment and sedation vacation protocols may be associated with lower rates of oversedation and improved patient outcomes.

Disclosure(s): HS Deol has nothing to disclose. A Minaie has nothing to disclose. S Surani has nothing to disclose. G Udeani has nothing to disclose.
Evaluation of the impact of beta-lactam allergy on the management of gram-negative fluoroquinolone-resistant bacteremia in the community hospital setting
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Infectious Disease
ASHP Midyear Clinical Meeting, Las Vegas, NV, December 7, 2016

Background: In certain parts of the United States, gram-negative fluoroquinolone resistance rates approach 40 percent. It is imperative that clinicians appreciate this reality when selecting empiric therapy. However, in the setting of beta-lactam allergy, many physicians are compelled to use non-beta-lactam alternatives, particularly fluoroquinolones. Beta-lactam allergy and subsequent use of a fluoroquinolone may lead to inappropriate empiric coverage.

Objective: The purpose of this study is to evaluate the impact of beta-lactam allergy on the management of gram-negative bacteremia caused by resistant gram-negative pathogens.

Methods: This study was a multicenter, retrospective chart review of patients admitted over a 33-month period to evaluate the management of fluoroquinolone-resistant gram-negative bacteremia. Patients meeting inclusion criteria were divided into two groups: those with and without a beta-lactam allergy. Each group was further divided into those that received a beta-lactam antibiotic and those that did not.

Results: Retrospective data revealed 182 patients meeting the inclusion criteria. The presence of a beta-lactam allergy was associated with fluoroquinolone use. In addition, a longer time to adequate antibiotic coverage was observed in the beta-lactam allergy group. No apparent differences were found for various clinical outcomes such as fever.

Conclusions: The presence of a beta-lactam allergy, unsurprisingly, was associated with more fluoroquinolone utilization. It also may be associated with delay in time to active antibiotic therapy. Statistical analysis is warranted to make any final conclusions.

Disclosures: The authors have nothing to disclose concerning possible financial or personal relationship with commercial entities that may have direct or indirect interest in the subject matter of the study.
Evaluating the Impact of Rapid Microbiological Diagnostics on the Management of Bacteremia due to Extended-Spectrum Beta-Lactamase (ESBL) Producing Enterobacteriaceae.

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ASHP Midyear Clinical Meeting, Las Vega, NV, December 7, 2016

Background: Resistant gram negative pathogens are a continuous threat in the health care setting. Recent advances in rapid diagnostic technology have allowed for timely detection of such organisms. However, optimal utilization of such technologies remains challenging at many facilities.

Objective: The objective of this study is to evaluate the impact of rapid diagnostic testing on early treatment of bacteremia due to ESBL-producing Enterobacteriaceae.

Methods: The protocol for this study was approved by the Institutional Review Board and consists of a multicenter, retrospective chart review conducted at three community hospitals. An evaluation of patients admitted over a 33-month period will be completed to evaluate the antimicrobial management of ESBL-producing Enterobacteriaceae. Inclusion criteria for review will be as follows: patients admitted for at least 24 hours who produced an Enterobacteriaceae isolate from blood that was resistant to a third-generation cephalosporin.

Results: Retrospective data revealed 189 patients meeting inclusion criteria. A higher instance in both 12 and 24 hour carbapenem therapy post-smear was demonstrated in the rapid diagnostic technology group. In addition, a higher instance of antibiotic change before final culture and sensitivity results was seen in this group. At 24 hours post-smear, 22% of patients in the control group were febrile, compared to 13% in the rapid diagnostics group.

Conclusions: Preliminary data suggests faster time to optimal therapy using rapid diagnostic technology. However, statistical analysis is warranted to make any final conclusions.

Disclosure: The authors have nothing to disclose concerning possible financial or personal relationship with commercial entities that may have direct or indirect interest in the subject matter of the study.
Antimicrobial therapy in pneumonia - Fluid overload or Pneumonia?
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Not previously presented

Background:
Patients with radiographic evidence of fluid overload without clinical symptoms of pneumonia are often treated with antimicrobial therapy.

Objective: To evaluate the use of antimicrobial therapy in critically ill patients with fluid overload or congestive heart failure (CHF) diagnosed as pneumonia

Methods:
Retrospective chart review of patients on antimicrobial therapy treated for pneumonia in the intensive care unit was conducted. The primary outcome was fluid overload or CHF and no radiologic or clinical evidence of pneumonia managed with antimicrobial therapy. Patients on antimicrobial therapy for other infections were excluded. Appropriate antimicrobial therapy was based on radiographic evidence, clinical data, and presentation. Patient group categories were: A [pneumonia], B [fluid overload], and C [fluid overload and pneumonia].

Results:
Thirty-five patients were included in the analysis. Mean body temperature and white blood cell count were 37.7 ± 0.6°C, and 16.9 ± 6.97 x10³ µL respectively. There were 20% in Group A, 43% in Group B, and 26% in Group C. Median BNP (136.5 vs.758 vs.979 pg/mL, p=0.08). Median duration of antibiotics (8 vs. 6 vs.6 days p=0.64). Patients with CHF (0 vs. 10 vs. 3 p=0.02). No evidence of pneumonia or fluid overload was observed in 11% of cases.

Conclusions:
Our results demonstrate 54% inappropriate use of antimicrobial therapy in patients with CHF, or fluid congestion misdiagnosed as pneumonia. Appropriate interpretation of radiographic evidence, laboratory data, and critical clinical assessment in use of empiric antimicrobial therapy in this population is warranted.

Disclosures: UJ Mbadugha has nothing to disclose, M Bullen has nothing to disclose, NA Akuffo has nothing to disclose, GO Udeani has nothing to disclose.
Impact of Nursing Education on Adherence to a Glycemic Control Protocol in an Intensive Care Unit
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PGY1
Not previously presented

Background: Hyperglycemia has been associated with increased morbidity and mortality in the critically ill, however a paper published in 2009 illustrated that tight glycemic control resulted in higher mortality. A glycemic control algorithm was implemented at Memorial Hermann Memorial City in June 2015. Baseline compliance with this algorithm was assessed at 13% in April 2016. Due to low compliance, nursing education was implemented in December 2016.

Objectives: The purpose of this study was to assess the impact of nursing education on compliance rates with the hyperglycemia algorithms in the ICU.

Method(s) or Procedure(s): This was a retrospective chart review. Patients had to be ≥18 years, admitted to the ICU, and have a glucose level ≥ 150 mg/dl. Patients were separated into two groups: those admitted to the ICU before nursing education (Pre-education group) and those admitted after (Post-education group). A power analysis revealed that 115 patients needed to be enrolled in each arm to detect a 10% difference in protocol adherence.

Result(s): A total of 179 patients were included, with 116 patients in the pre-education group and 63 patients in the post-education group. Adherence to the glycemic protocols were 12.5% and 15.9% in the pre- and post-education group respectively. The average percent of time the blood glucose was between 110-180 mg/dl was 68.1% in the pre-education group and 73.5% in the post-education group; the incidence of hypoglycemia was 12.1% vs 19.0%, respectively.

Conclusion(s): Nursing education did not seem to impact adherence to the glycemic protocols. Continued education, as well as reaching out to prescribers, may be beneficial.

Disclosure(s): Authors of this presentation have nothing to disclose.
Conversion of selected antibiotics from intravenous piggyback administration to intravenous push administration for pre-operative doses
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Background: Medication expenditure is the fastest growing component of the U.S. healthcare system, making up a total net spending of $309.5 billion annually. Healthcare facilities must make significant budget changes in order to keep up with rising drug prices. One process which may reduce cost is converting certain antibiotics from intravenous piggyback (IVPB) to intravenous push (IV Push) administration.

Objectives: The objectives of this project were to implement a pilot quality improvement project involving the conversion of ceFAZolin 1 gram, ceFAZolin 2 gram, ceFOXitin 1 gram, ceFOXitin 2 gram, cefUROXime 750 mg, and cefUROXime 1.5 gram to IV Push administration for pre-operative doses and to perform a cost comparison analysis between IVPB and IV Push administration methods.

Methods: A one year hospital wide utilization report of ceFAZolin 1 gram and 2 gram, ceFOXitin 1 gram and 2 gram, cefUROXime 750 mg and 1.5 gram doses was created. A cost comparison analysis was performed to estimate cost savings of IV Push administration.

Results: Project was implemented in March 2017. An estimated cost savings per dose favoring IV Push administration is as follows: ceFAZolin 1 gram ($3.71), ceFAZolin 2 gram ($5.01), ceFOXitin 1 gram ($3.28), ceFOXitin 2 gram ($3.28), cefUROXime 750 mg ($3.28), and cefUROXime 1.5 gram ($2.46). The estimated one year savings for the institution if the process is implemented hospital-wide would be $59,746.47.

Conclusion: Converting antibiotics which can be safely given via IV Push will reduce hospital medication cost.

Disclosure(s): 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.
Background: Benzodiazepines (BZD) are the most commonly prescribed sedative-hypnotic drugs in the United States. The specific BZD antagonist is flumazenil which can enhance patient recovery following anesthesia or BZD over dose. Flumazenil has been shown to antagonize sedation, impairment of recall, psychomotor impairment and ventilator depressions produced by BZD.

Objective: The purpose of this study was to evaluate the administration practices for flumazenil as a reversal agent for BZD medications at our hospital.

Method(s): This was a retrospective chart review evaluating all patients receiving intravenous flumazenil between January 1, 2015 and August 31, 2016. Patients receiving flumazenil as continuous infusion or who are missing both a Contact Serial Number and Medical Record Number were excluded. Patients were identified through monthly reports of flumazenil utilization.

Result(s): One hundred flumazenil administrations fit the inclusion and exclusion criteria, 63% in procedural areas and 37% in patient care units. The most commonly identified reason for flumazenil administration on patient care units was altered mental status, 65%, while no documented reason was found in 63% of administrations in procedural areas.

Conclusion(s): The majority of flumazenil administrations on patient care units occurred secondary to altered mental status. In procedural areas, flumazenil administration appears to be administered routinely post procedure. Staff discussions and education are required regarding proper administration and documentation of flumazenil.

Disclosure(s): FA Aldhahri, BJ Adams, MI Vallabh 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.
Evaluating physician adherence to the diabetic ketoacidosis treatment order set and associated outcomes
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PGY1
Not previously presented

Background: Diabetic ketoacidosis (DKA) is a severe complication of diabetes mellitus requiring prompt management to minimize further complications. Goals of treatment include restoration of volume deficits, resolution of hyperglycemia, ketosis and acidosis, correction of electrolyte abnormalities, and treatment of precipitating events. To standardize therapy, decrease variations in care, and increase the quality of care provided to patients admitted with DKA at our institution, a computerized order set was created.

Objective: Evaluate the utilization rates of the DKA order set for patients admitted with a diagnosis of DKA, time to anion gap normalization, hypoglycemic episodes, untreated electrolyte derangements prior to or after initiation of insulin therapy, emergency department (ED), intensive care unit (ICU) and hospital length of stay (LOS).

Methods: This was a single-center, retrospective, observational review of patients admitted at our institution from July 1, 2015 through June 30, 2016 with a diagnosis of DKA.

Results and conclusions: An interim analysis of 28 patients was performed. Patients for whom the order set was utilized (n = 25) achieved anion gap normalization sooner than patients for whom the order set was not utilized (n = 3), (13.6 hours vs. 25 hours, 𝑝 = 0.03). However, patients for whom the order set was utilized had a significantly longer ICU LOS (3.5 days vs 0 days). The results of this analysis create an opportunity to educate practitioners on the utilization of electrolyte protocols for our DKA population. Data collection is ongoing and necessary to further identify variations in care and the associated outcomes.

Disclosures: Ol Arojo, LC Davis, MI Vallabh 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 dofetilide (Tikosyn) at a large, quaternary academic medical center
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Not Previously Presented

Background: Dofetilide (Tikosyn), a class III antiarrhythmic drug manufactured by Pfizer, was introduced to the market in 1999. Due to dofetilide’s side effect profile, drug-drug interactions, and risk of torsades de pointes, Pfizer has created a dofetilide prescribing protocol in an effort to optimize efficacy and safety. Despite the Risk Evaluation and Mitigation Strategy being lifted in March 2016, the Food and Drug Administration still advises prescribers to follow the protocol.

Objective: The purpose of this study is to evaluate the appropriate utilization of dofetilide by following the prescribing protocol put forth by Pfizer.

Methods: This study was a retrospective review of patients admitted between January 1, 2013 and August 31, 2016 who were initiated on dofetilide. Descriptive statistics was utilized to analyze data.

Results: Of all new patients started on dofetilide, 27.4% (n=17) did not have all laboratory parameters measured prior to the first dofetilide dose with magnesium being the lab not collected in all 17 patients. Forty-one patients (66.1%) received dofetilide despite having a QTc greater than the protocol’s recommendation. Findings show that 71.0% (n=44) of patients were discharged with a QTc less than 500 or 550 msecs (those with ventricular conduction abnormalities).

Conclusions: Our study did not show any detrimental outcomes of non-adherence to the dofetilide protocol; however, it is important to continue to administer dofetilide when pertinent pieces of information are known. An opportunity for staff discussion and education regarding the proper administration and monitoring prior to and after dofetilide administration has been identified.

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.
Evaluation of Appropriate Antibiotic Prophylaxis Dosing for Orthopedic Surgeries
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Not previously presented

Background: Appropriate timing and dosing of peri-operative antibiotics reduces the risk of post-surgical infections, further complications, and hospital readmissions. The Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery published by the American Society of Health-System Pharmacists with the Surgical Infection Society, the Society for Healthcare Epidemiology of America, and the Infectious Diseases Society of America, recommend a dose of cefazolin 2 g intravenously up to 60 minutes prior to surgery for patients <120 kg undergoing hip or knee arthroplasty.

Objective: To evaluate the appropriateness of peri-operative prophylactic antibiotic dosing and timing for hip and knee procedures at UTMB Health.

Method(s): Medical records for 454 patients at UTMB Health were retrospectively reviewed. Selected patients underwent hip or knee arthroplasty between July 1, 2015 and September 30, 2016. Patients were excluded based on incomplete medical records, immunocompromised state, or incarceration.

Result(s): An appropriate dose of cefazolin or therapeutically equivalent alternative was administered to 89% (308/346) of all patients who underwent hip or knee procedures. Nine out of 19 patients who were >120 kg were given 3 g of cefazolin. Twenty procedures extended beyond 240 minutes, with only three patients redosed appropriately. Seven total infections (7/346) were reported. Four of the seven infections were not covered by guideline-recommended cefazolin.

Conclusion(s): Appropriate peri-operative prophylaxis was administered more consistently in patients <120 kg and procedures <240 minutes. Deviations from guidelines occurred in 50% of patients who weighed more than 120 kg and 57% of procedures that extended beyond 240 minutes.

Disclosure(s): Authors of this presentation have no disclosures concerning financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.
EVALUATION OF CLINICAL OUTCOMES IN HIV/HEPATITIS C CO-INFECTED PATIENTS TREATED WITH DIRECT ACTING ANTIVIRALS FOR HEPATITIS C IN AN AMBULATORY CARE SETTING. Sumanth M. Reddy
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PURPOSE: The direct-acting antivirals are highly effective and well tolerated in clinical trials. However, there were marked differences in the patient demographics between patients in the clinical trials and our institution’s patients. As a state funded health system that serves primarily the indigent the cost of these medications presents a significant barrier to providing and receiving treatment. This study aims to determine the real-world effectiveness of the direct-acting antiviral therapy in HIV/HCV co-infected patients in an ambulatory care setting within this population.

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

RESULTS: A total of 101 patients were analyzed during the timeframe of January 1st, 2014 to November 1st, 2016. 94% (95/101) of patients were genotype 1. 76.2% (77/101) patients received ledipasvir/sofosbuvir containing regimens while 23.8% (24/101) patients received non-ledipasvir/sofosbuvir treatment regimens. 93.1% (68/73) patients who received ledipasvir/sofosbuvir containing regimens achieved virological cure whereas 100% (19/19) of patients receiving non-ledipasvir/sofosbuvir antivirals experienced virological cure (p=0.0883). Additionally, 4 patients had virological failure in the non-cirrhotic subgroup, and 1 patient had virological failure in cirrhotic subgroup (p=0.2273). Patient medication assistance programs (manufacturer funded) accounted for 51.5% of funding while Medicare and private insurance accounted for 42.5% and 6% respectively. For compliance the median number of follow-up visits was 4 and the median number of missed doses was zero. Approximately 72% (72/101) of patients did not report any adverse effects related to treatment. The adverse events reported in the remaining 28.7% (29/101) were mild in severity.

CONCLUSION: Based on the data obtained, the efficacy and safety of direct-acting antivirals in our patient population were similar to findings in previous trials. In addition to high efficacy for Hepatitis C treatment, the direct-acting antivirals resulted in minimal side effects none of which were severe. The efficacy found was consistent even in patients who missed several doses. The cost of these antivirals was primarily subsidized
by manufacturer-funded patient assistance programs and Medicare and thus minimized
cost to our institution.
Evaluation of fentanyl patch usage at a large academic medical center
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Not previously presented

**Background:** Opioids remain the mainstay of pain management in the inpatient and the outpatient settings. Fentanyl patches have been used to control moderate to severe chronic pain in patients with adequate prior exposure to opioids and are contraindicated for immediate postoperative pain relief. There have been increasing concerns for the lack of understanding of the prescribing of the patches. For that reason, it is important to develop an effective strategy for a safer utilization of fentanyl patches.

**Objective:** To assess the prescribing practices of fentanyl patches at our institution and if necessary determine a strategy for appropriate utilization.

**Methods:** This is a retrospective chart review of randomly selected patients who were admitted to our institution during 2016 and received fentanyl patches. For each eligible patient information was obtained from the electronic medical record including demographic, indication of therapy, history of opioid use including fentanyl patch use, MEDD dose, and adverse events.

**Results:** A total 100 of patients were included. The median fentanyl patch dose administered was 50 mcg/hr and 50% of patients were continued on their home regimen. Among the 50 new fentanyl patch orders, 5% had an MEDD of at least 60mg over a week while 9% had an MEDD of less than 60mg, 14% had their MEDD calculated over less than a week, and 17% had an MEDD of less than 60mg calculated over less than a week.

**Conclusion:** This study demonstrated the opportunity for improvement in complying with safe prescribing guidelines of fentanyl patches at our institution.

**Disclosures:** AA AlSomali, C Huls, BJ Adams 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 ivabradine at a large, quaternary academic medical center
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Not previously presented

**Background**: Heart Failure (HF) is a common condition in developed countries with the prevalence rising to 10% or more in older age. HF costs the nation an average of $30.7 billion each year. On April 15, 2015 the Food and Drug Administration (FDA) approved ivabradine (Corlanor®) for HF management. Ivabradine is used to reduce the risk of hospitalization.

**Objective**: Assess the utilization of ivabradine for FDA approved indications at Baylor St. Luke’s Medical Center.

**Method(s)**: A retrospective chart review of 69 patients from April 1, 2015 through April 31, 2017 admitted and received ivabradine. Descriptive statistics are utilized to analyze the data.

**Result(s)**: A total of 69 ivabradine patients were included in the evaluation use at a BSLMC. Mean patient age was 56.1 ± 17, of which 48 (69.5%) were men and 39 (56.5%) were Caucasians. Appropriate ivabradine indication following FDA criteria were appropriate in 49 (71%) of the patients. A total of 38 patients (55.1%) received beta-blocker. Thirty one patients were receiving the maximum tolerated dose, with seven patients on the target dose per ACCF/AHA guideline.

**Conclusion**: The majority of ivabradine use was appropriate, following FDA approved indications. However, because ivabradine has been used with contraindicated conditions (e.g. acute decompensated heart failure), staff education is required.

**Disclosures**: KK AlJoudi, M Bayat, SE Michaud have no disclosures concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.
Medication Use Evaluation of Sugammadex in a Community Hospital
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Background: Reversal of agents causing neuromuscular blockade after surgery was previously done by acetylcholine-esterase inhibitors such as neostigmine. These medications utilized an indirect mechanism of action that commonly leads to slow and incomplete reversal as well as cholinergic adverse effects. Sugammadex is a cyclodextran that binds to and removes rocuronium and vecuronium from circulation leading to a more rapid and complete reversal of paralysis without cholinergic effects. Currently the FDA has limited sugammadex indications and doses to patients undergoing surgery or emergent cannot intubate cannot ventilate situations.

Objective: The objective of this study is to evaluate appropriateness of sugammadex utilization for reversal of neuromuscular blockade at our hospital.

Methods: A retrospective chart review of all patients who received at least 1 dose of sugammadex from October, 1 2016 through December 31, 2016 was performed. Data collected included age, sex, height, weight, surgical procedure, length of anesthesia, depth of blockade as evidenced by the train-of-four, sugammadex dose, concurrent paralytics and reversal agents. Criteria for appropriate and inappropriate use and dosing were defined.

Results: 68 patients were included in the study. All doses were administered for reversal of appropriate agents in surgical patients, and no patients required subsequent doses for reversal. Almost half (47%, n = 32) of doses were considered inappropriate by our criteria.

Conclusions: Sugammadex is utilized in the correct setting in our institution, but further education and research may be needed on appropriate dosing.

Disclosures: The authors of this presentation have nothing to disclose
Background: Multiple myeloma (MM) paraproteins have calcium-binding properties. It is unknown whether corrected calcium accurately reflects calcium status in patients with MM.

Objective: To determine and compare the correlation of values calculated using the modified Orrell corrected calcium equation to ionized calcium measurements in patients with MM.

Methods: A single-center retrospective chart review of patients with MM at a large comprehensive cancer center was performed. Patients with breast or non-small cell lung cancers were included as controls. Correlations between ionized and corrected calcium were calculated. Sensitivity and specificity of corrected calcium were calculated, using ionized calcium as an absolute calcium status indicator. Multiple linear regression was performed to assess several variables’ impact on corrected calcium.

Results: The study included 100 patients with MM and 100 patients in the control group. Significant correlations were found between ionized and corrected calcium in the MM (0.76, p < 0.001) and control (0.85, p < 0.001) groups. The sensitivity and specificity of corrected calcium in detecting hypercalcemia were 36% and 91% in the MM group and 72% and 88% in the control group, respectively. Multiple linear regression did not show a strong association between the included variables and corrected calcium in either group.

Conclusions: The correlation between ionized and corrected calcium was enhanced in the control group compared to the MM group. Given this finding and the low capacity for corrected calcium to detect ionized calcium-confirmed hypercalcemia, ionized calcium may be the best method of detecting hypercalcemia in patients with MM.

Disclosures: The authors have nothing to disclose
BACKGROUND: The US HITECH Act promotes the utilization of computerized provider order entry (CPOE) systems to improve medication management. Literature supports the efficacy of information technology (IT) modifications to CPOE, such as the addition of predetermined order sets, in affecting provider behavior. There is a paucity of evidence demonstrating the impact of order sets on decreasing drug utilization. At our institution, intravenous (IV) acetaminophen is coincidentally listed first and pre-selected in numerous pain order sets.

METHODS: This evaluation is a multi-site, retrospective, observational study. Order sets containing IV acetaminophen were previously modified by de-selecting IV acetaminophen and relocating it to a lower position among other equivalent options. Primary analysis includes all patients 18 years and older who received IV acetaminophen through an order set. Secondary analysis includes all IV acetaminophen orders to evaluate utilization of order sets compared to direct, single line order entry. Data collected for secondary analysis include the method of order entry, diagnosis related group (DRG), and institution.

RESULTS: A total of 16,665 IV acetaminophen orders were placed between June 1st to December 31st, 2016. 12,358 (74%) of all orders were ordered through an MPP. The total number of IV acetaminophen orders through an MPP before and after modification was 5,832 and 6,806 respectively (p-value = 0.73).

CONCLUSION: Order set modification alone does not significantly reduce overall utilization if IV acetaminophen. Analysis of DRGs identified service lines that are the key drivers of IV acetaminophen utilization: orthopedics, labor and delivery, general surgery, and bariatric surgery.

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.
Evaluation of critically prolonged activated partial thromboplastin times (aPTT) in hospitalized patients receiving continuous infusion unfractionated heparin (UFH)

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Not previously presented

Background: aPTT is frequently used to monitor and guide UFH therapy. Lab errors, such as drawing blood from a heparinized line, may lead to falsely prolonged aPTT values. aPTT values must be evaluated for accuracy and re-testing may be warranted to ensure accuracy.

Objectives: To evaluate critically prolonged aPTT values for accuracy, and to evaluate outcomes related to sub-therapeutic anticoagulation.

Methods: A retrospective chart review of critically prolonged aPTT values from patients receiving UFH was conducted. The primary endpoint was the incidence of critically prolonged aPTT that appeared to be secondary to a blood draw error. Secondary endpoints included actions taken in response to critically prolonged aPTT values and the risk of adverse events possibly related to erroneous UFH infusion rate reductions.

Results: A total of 125 aPTT values were reviewed. In response to critically prolonged aPTT values, the aPTT was re-checked in 24 cases (19%), the infusion rate was reduced in three cases (2%), UFH was held in 95 cases (77%), and UFH was discontinued in two cases (2%). There were 29 cases of sub-therapeutic aPTT values after critically prolonged aPTT value (23%), of which five adverse events occurred.

Conclusion: A clinically significant proportion of aPTT values seemed to be falsely prolonged. Actions taken to correct these aPTT values often led to sub-therapeutic aPTT values. This information provides an opportunity for improvement through education, as well as possible development of written procedures to guide UFH therapy and monitoring.

Disclosures: Authors of this presentation have nothing to disclose.
Evaluation of bivalirudin (Angiomax®) utilization for off-label indications at an academic medical center
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Background: Bivalirudin (Angiomax®) is approved by the Food and Drug Administration for use in percutaneous coronary interventions though its use in other indications is increasingly investigated.

Objective: The purpose of this evaluation was to assess bivalirudin utilization for off-label indications in order to identify opportunities for cost-saving initiatives.

Methods: This was a retrospective chart review of patients receiving bivalirudin from January 2016 through December 2016. The primary outcome was to identify off-label indications for bivalirudin. Secondary outcomes included dosing, time to therapeutic partial thromboplastin time, rates of bleeding and thrombosis.

Results: The most common indication for off-label bivalirudin utilization was heparin-induced thrombocytopenia (HIT) (77%). Most patients received an appropriate initial dose (91%). Rates of major bleeding, minor bleeding, and thrombosis were 15%, 27%, and 19%, respectively. When used inappropriately versus appropriately for suspected HIT, patients received bivalirudin for extended durations (11 vs. 4 days, p < 0.001) and remained on this therapy for a longer duration despite HIT being confirmed negative (9 vs. 1 day(s), p < 0.001). If bivalirudin had been discontinued within 48 hours following a negative HIT result, the estimated cost-savings for this study period would have been $58,665.

Conclusion: Opportunity exists for pharmacists to evaluate patients on bivalirudin, including assessing appropriate indications, monitoring laboratory results for HIT, and discussing alternative anticoagulation options with other healthcare providers when appropriate.

Disclosure: All authors have nothing to disclose.
Impact of pharmacist-led nursing in-service on discharge counseling at a community acute care hospital
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Background: In-patient counseling by hospital pharmacists has been shown to improve medication adherence and medication related Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores. However, certain barriers to pharmacist discharge counseling include demanding workflow and lack of time and staff. When pharmacists cannot provide counseling to every patient to be discharged, nurses can be the line of communication for patients to obtain information on their new medications.

Objectives: The purpose of this study is to assess the change of HCAHPS scores during the month when pharmacists provided nursing in-service on discharge counseling with medication counseling tool.

Method(s): This was an observational study conducted at a community acute care hospital. We included patients on a specific medical and surgical nursing unit from January 1, 2017 to February 28, 2017. Pharmacist-led nursing in-service on medication counseling was conducted for two weeks in the month of January. The in-service included a booklet with HCAHPS background, drug information resources, and counseling points. HCAHPS reports were generated by HealthStream™. Top box responses were used to compare between the two months.

Result(s): The adjusted number of patient responses was similar in the month of January and February 2017. The top box responses for communication about medicines were 57.1% and 68.2% in January and February, respectively. SLWH top boxes percentage was 2.3% above the HealthStream™ National Database benchmark in February, compared with 8.8% below benchmark in January.

Conclusion(s): Pharmacist-led in-service on medication counseling for the nursing staff may have a positive impact on HCAHPS score based on one month’s data.

Disclosure(s): The authors of this presentation have no disclosures concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of this presentation.
Evaluating the use of ceftazidime/avibactam and ceftolozane/tazobactam at an acute care community hospital

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Not previously presented

Background: Ceftazidime/avibactam and ceftolozane/tazobactam are approved by the Food and Drug Administration (FDA) for complicated intra-abdominal infections and complicated urinary tract infections. Inappropriate use of the medication could lead to resistance and significant cost burden. These medications are designated as non-formulary by the Pharmacy and Therapeutic Committee (P&T) and their requests are limited to infectious disease consult only at CHI St Luke’s Health The Woodlands hospital (SLWH).

Objectives: The purpose of this project is assess the susceptibility of multi drug resistant (MDR) pathogens to at SLWH and to evaluate the usage of these medications for optimum patient care.

Method(s): This was a retrospective medication utilization evaluation that reviewed the electronic medical record of patients that had either received or been considered for ceftazidime/avibactam and ceftolozane/tazobactam at SLWH. Information collected includes ceftazidime/avibactam and ceftolozane/tazobactam susceptibility, aminoglycoside and meropenem susceptibility.

Result(s): There were MDR Klebsiella and MDR Pseudomonas isolates that were resistant to ceftazidime-avibactam and ceftolozane-tazobactam, respectively. Most MDR Klebsiella and MDR Pseudomonas isolates were resistant to meropenem. Some MDR Klebsiella and MDR Pseudomonas isolates are susceptible to aminoglycosides. However, the use of aminoglycosides was less desirable due to the renal toxicity.

Conclusion(s): Results support the continuation of standardized protocol to help guide the use of ceftazidime-avibactam and ceftolozane-tazobactam in appropriate patients to help reduce cost and provide optimal patient care.

Disclosure(s): All authors have nothing to disclose
Pharmacoeconomics and safety of SOFA vs SIRS for identifying septic patients.
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Not previously presented

Background: Changes in popular perception of sepsis has led to an updated definitions guideline, favoring SOFA (Sequential Organ Failure Assessment) over SIRS (Systemic Inflammatory Response Syndrome) for recognizing sepsis. Adoption of new definitions has been attenuated by CMS documentation which requires SIRS and fear at institutions with still-high sepsis mortality to switch to a possibly less sensitive assessment.

Objectives: To discuss pharmacoeconomic opportunities and safety concerns over adopting SOFA as a primary assessment for sepsis.

Methods: Patients in the ICU with orders for cultures and antibiotics were identified retrospectively. SOFA and SIRS scores were calculated for each update to patients’ charts, simulating a real-time clinical alert system. Positive results were compared for concurrent validity, including time from first positive result to concurrence. Physician notes and cultures were reviewed to determine which patients were treated as septic without evidence of sepsis (pharmacoeconomic opportunities) and which patients would not have been identified as septic or would have experienced treatment delays (safety concerns) when using SOFA over SIRS.

Results: Ninety-four patients were examined. Eighteen (19.1%, 95% CI: 0.124 – 0.283) were negative for SOFA but positive for SIRS, representing potential pharmacoeconomic opportunities. Of those 18 patients, 11 were treated for sepsis with no evidence of positive cultures. Only 7 of 72 patients with concurrence would have experienced any meaningful delays in treatment.

Conclusions: Using SOFA to guide sepsis treatment may reduce costs and help allocate resources to more ill patients. However, both sepsis scores are not without limitations and neither should replace clinicians’ judgment.

Disclosures: BJ Donald is a PGY1 resident at Corpus Christi Medical Center (CCMC) and has nothing to disclose. GO Udeani is the Clinical Pharmacy Manager at CCMC and has nothing to disclose. S Surani is the Pulmonology/Critical Care Fellowship Director at CCMC and has nothing to disclose. L Azali and H Patel are P3 students at Texas A&M Rangel College of Pharmacy and have nothing to disclose.
Incidence of Simulated Needlesticks During Needle Cap Removal using Common Cap Removal Techniques in Sterile Compounding
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Education
Not previously presented

Background: Healthcare workers are at risk of needlestick injuries due to manipulation of syringes in daily work activities including sterile compounding. Sharps injuries can occur due to risks of using needles under fatiguing circumstances, use of improper procedures, or failure to utilize proper precautions. Risk is reduced with proper handling of needles. Various methods of needle cap removal are taught, however, the efficacy of common needle cap removal techniques has not been formally evaluated in reducing needlesticks.

Objectives: The objective of this study is to compare the incidence of simulated needlesticks and near misses using three common needle cap removal techniques.

Methods: Three volunteers will complete needle cap removals using one needle cap removal technique. Three removal techniques will be evaluated including pulling the syringe and cap straight in opposite directions; pushing the cap and syringe together before pulling in opposite directions; and holding the wrists together while pulling the cap and syringe apart. Blunt needles will be used to simulate needlesticks without injury. If the needle touches the hand or skin of a participant, it will be counted as a simulated needlestick. If the needle passes within two inches of the hand of a participant, it will be counted as a near miss. The number of simulated needlesticks and near misses for each cap removal technique will be recorded and compared between each technique.

Results: Data collection is ongoing.

Conclusions: Data collection is ongoing.

Disclosures: CA Faubion has nothing to disclose. PS Ochoa has nothing to disclose. JA Vega has nothing to disclose.
Impact of Rescheduling of Hydrocodone Combination Products from Schedule III to Schedule II on patient pain management  
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Background: Effective October 6, 2014, all hydrocodone combination products were rescheduled by the DEA from Schedule III to Schedule II in an effort to combat prescription drug abuse.  

Objectives: To assess the impact on patient pain management and the financial impact on the institution following the rescheduling of hydrocodone-combination products.  

Method(s) or Procedure(s): Data was obtained for two observation periods: October 6, 2012-December 31, 2012 (pre-hydrocodone rescheduling) and October 6, 2014-December 6, 2014 (post-hydrocodone rescheduling). Patients were included if they were discharged from Ben Taub or Lyndon B. Johnson Emergency Center during these time periods, and were prescribed at least one analgesic controlled substance in a solid oral dosage form (i.e. tablets, capsules) at discharge.  

Result(s): There was a 21% decrease in hydrocodone-combination products prescribed and a 13% increase in pain-related primary care visits during the observation periods from 2012 to 2014.  

Conclusion(s): The rescheduling of hydrocodone-combination products resulted in a reduced number of prescriptions of hydrocodone-combination products and an increase in pain-related primary care visits.  

Disclosure(s): C Adibe has nothing to disclose. E Bergeron has nothing to disclose. J Lionetti has nothing to disclose. K Patel has nothing to disclose. M George has nothing to disclose. S Ruppelt has nothing to disclose.
PGY2
Compliance with dose adjustment algorithms in patients receiving continuous intravenous infusion sedation
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Not previously presented

Background: Excessive sedation has been shown to prolong length of mechanical ventilation, and increase the incidence of delirium and associated mortality. Cumulative sedative exposure, leading to excessive depth of sedation, appears to be an important contributing factor. Improved outcomes have been observed with lower cumulative benzodiazepine exposure. Frequent increases of the infusion rate when an immediate effect is not observed may result in substantial accumulation for agents with a long half-life versus use of several rescue boluses prior to assessing the need to increase the infusion rate.

Objectives: The purpose of this study was to evaluate compliance with the dose adjustment algorithms for fentanyl, midazolam, lorazepam, and hydromorphone and Richmond Agitation-Sedation Scale (RASS) score documentation for mechanically ventilated patients and compare cumulative sedative exposure, length of mechanical ventilation (LOMV), intensive care unit (ICU) length of stay (LOS) and incidence of positive Confusion Assessment Method (CAM)-ICU screenings in patients with good versus poor compliance with the dose adjustment algorithms at our hospital.

Method(s): This study evaluated patients who received continuous intravenous sedation with fentanyl, midazolam, lorazepam, or hydromorphone while being mechanically ventilated at our institution from January 1, 2016 to October 31, 2016.

Result(s): Thirty-three patients were identified for meeting inclusion criteria. Seventy-six percent of patients (n=25) did not meet compliance with the dose adjustment algorithm.

Conclusion(s): Findings demonstrate a significantly high non-compliance rate without a statistically significant difference in LOMV, ICU LOS, CAM-ICU positive screenings, or tracheostomy when comparing compliant to non-compliant dose adjustment algorithms. 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.
Evaluation of laboratory test and non-heparin anticoagulant utilization for patients with suspected heparin-induced thrombocytopenia at a large academic medical center
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PGY2
Not previously presented

Background: Currently at Baylor St. Luke’s Medical center (BSLMC), the ordering provider is encouraged to calculate 4T’s score prior to ordering an anti-PF4 assay for patients with suspected heparin-induced thrombocytopenia (HIT). If the 4T’s score is <4, the provider is guided not to proceed with the test due to high negative predictive value for HIT. Since September 2016, BSLMC also adopted a new procedure to receive and document serotonin release assay (SRA) results to reduce the utilization of non-heparin anticoagulants in HIT negative patients.

Objectives: To evaluate the use of laboratory test and non-heparin anticoagulants in patients with suspected heparin-induced thrombocytopenia

Method(s) or Procedure(s): This is a single-center, retrospective, chart review of patients with an anti-PF4 assay test ordered.

Result(s): An interim analysis of 50 patients was performed. Anti-PF4 tests were ordered inappropriately 26% of the time for patients with calculated 4T’s score <4. There was as statistically significant difference for patients with anti-PF4 OD < 1.0 and negative SRA (p=0.02). With the new SRA reporting process, the average time for SRA results to be updated was 11.35 hours.

Conclusion(s): The ordering user was more likely to calculate a higher 4T’s score than the investigator. Anti-PF4 tests were ordered inappropriately with low 4T’s scores. It takes less time for the SRA result to be updated with the new SRA result reporting system. Our results support the notion in previous studies that SRA test is not necessary for confirming HIT in patients with low 4T’s scores and low anti-PF4 OD values.

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.
Background: Approximately 20% of patients experience a preventable adverse drug event within three weeks of discharge from a hospital. A pharmacist-driven discharge counseling service has demonstrated several benefits including decreasing readmission rates, improving patient outcomes, improving patients' medication adherence and ultimately serving as a cost-saving mechanism for the hospital.

Objectives: To assess the impact of an electronic health record (EHR) consult order to improve the discharge counseling capture rate, specifically in high risk patients (LACE ≥ 9).

Methods: This is a quasi-experimental quality improvement study to determine the impact of implementing an EHR discharge counseling consult order in a large, quaternary academic medical center. Patients have been divided into two groups: Group A (January 1 to March 31, 2016) – pre-implementation of consult order and Group B (January 1 to March 31, 2017) – post implementation of consult order.

Results: An interim analysis of 685 patients has been performed for January 1 to March 31, 2016 and January 1 to March 4, 2017. The two study arms (Group A, n=397; Group B, n=288) each had an average LACE score of 12. The percentages of patients who received discharge counseling in Group A and B were 4.5% and 38.9%, respectively. In Group B, 29.2% of patients received a consult order and pharmacists addressed 70.2% of these consults.

Conclusions: Based on the interim data, it is indeterminate as to whether the EHR consult order improved the discharge counseling capture rate; however during the intervention period, the discharge counseling capture rate increased by 764%.

Disclosure(s): The authors of this presentation have no disclosures concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of this presentation.
Influence of elements chosen and executed from the sepsis management order set on core measure compliance and outcomes
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Background: The recently published Sepsis Core Measure incorporates the three-hour and six-hour bundles as recommended by the Surviving Sepsis Campaign. However, adoption and implementation of a sepsis order set that incorporates such recommendations have been limited.

Objectives: To determine the utilization and execution of specific elements from the sepsis management order set and its impact on core measure compliance as well as patient outcomes in sepsis and septic shock patients.

Methods: This was a single-center, retrospective chart review of patients who were initiated on the sepsis management order set from January 2016 to March 2016.

Results: Of 129 patients evaluated, patients that completed all necessary components of the order set (n = 30) had a numerically lower mortality rate of 6.7% versus 14.1% (p = 0.36) in those who did not (n = 99). Core measure compliance was 100% in order set compliant group, and 30.3% in those who did not (p <0.01). Order set compliant group also had shorter ICU length of stay (p = 0.04). Order set compliant group had higher percentage of patients presenting without hypotension or hyperlactatemia (90% vs. 42%, p <0.01).

Conclusions: Lower mortality, ICU length of stay, and higher core measure compliance rate were observed in patients that met all components of the sepsis order set. However, majority of patients in the order set compliant group did not have sepsis complicated with hypotension or hyperlactatemia. Better compliance with sepsis order set in patients with hypotension or hyperlactatemia may improve core measure compliance and survival.

Disclosure: Authors have nothing to disclose.
Ceftolozane/tazobactam activity against meropenem non-susceptible *Pseudomonas aeruginosa* bloodstream isolates
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Not previously presented

Background: *Pseudomonas aeruginosa* (PSA) is a common cause of nosocomial infections and is associated with significant patient mortality. Carbapenems have been used empirically for PSA infections, although the increasing prevalence of carbapenem-resistance limits their reliability to provide acceptable empiric coverage. Ceftolozane-tazobactam (C/T) has potent in-vitro activity against PSA and is an alternative therapy option for carbapenem-resistant PSA infections.

Objectives: We sought to evaluate the activity of C/T against PSA bloodstream infection (BSI) isolates that were non-susceptible to meropenem.

Methods: PSA BSI isolates at a large academic medical center were screened for non-susceptibility to meropenem from 2015 to 2016. Meropenem non-susceptible isolates (MIC ≥4 mcg/mL) underwent additional antimicrobial susceptibility testing for C/T via Etest. One isolate per patient was included in the surveillance analysis. CLSI breakpoints were utilized to define susceptibility to C/T (MIC ≤4/4 mcg/mL). PSA ATCC 27893 served as a reference strain.

Results: 81 PSA BSI isolates were screened. Twenty meropenem non-susceptible isolates were recovered from unique patients. The MIC_{50} and MIC_{90} of meropenem were both 16 mcg/mL. Seventy-five percent of isolates (n=15) were susceptible to C/T. The MIC_{50} and MIC_{90} of C/T were 1.5 mcg/mL and 12 mcg/mL, respectively.

Conclusion: The majority of meropenem non-susceptible PSA BSI isolates were susceptible to C/T. These findings support the utility of C/T as an alternative therapeutic option for meropenem-resistant PSA. Routine susceptibility testing should be performed prior to the use of this agent.

Disclosures: VH Tam is a grant investigator for Merck. All other authors have nothing to disclose.