

[1p]

EFFICACY AND TOLERABILITY OF RALTEGRAVIR AS SALVAGE THERAPY FOR HIV-INFECTED VETERANS AT THE VA-NEW YORK HARBOR HEALTHCARE SYSTEM, VETERANS AFFAIRS MEDICAL CENTER. AMY NGUYEN; NEW YORK HARBOR VETERANS AFFAIRS MEDICAL CENTER A. Nguyen;

PURPOSE:Raltegravir has been on the VA formulary since December 2007, and although many investigational studies have shown that it is a generally well-tolerated, efficacious medication, it has not been studied within the demographics of our veteran population. Our patient population is generally older and predominately male, therefore, the toxicity and tolerability may be different. It is necessary to provide data to infectious disease providers on the efficacy and tolerability of raltegravir, the first FDA approved (October 16, 2007) HIV-1 integrase, a new class of highly active antiretroviral therapy, in the population of HIV-infected veterans, a very specific demographic. This information can be used to select salvage regimens for the appropriate patients to maximize their therapy.

METHODS:The study was performed at the New York Harbor Health Care System (NYHHS) Veterans Affairs Medical Center (VAMC). Investigators used the computerized patient records system (CPRS) at this tertiary care institution to identify treatment-experienced HIV infected patients on raltegravir 400mg twice daily in addition to a well-documented background anti-retroviral therapy. They will be followed and continually monitored from October 2008 until May 2009. The study size will be approximately 50-55 patients.

RESULTS:The CD4 counts, viral load, side effects, compliance, serum creatinine, creatine phosphokinase, and liver function tests will be followed for each patient to assess the tolerability and efficacy of raltegravir.

CONCLUSIONS:It is anticipated that this project will show that raltegravir is an efficacious and tolerable medication for our veteran demographic.

[3p]

THE IMPACT OF PHARMACIST INTERVENTION ON INPATIENT ADVERSE DRUG EVENT REPORTING. AGNES CHA; VA NEW YORK HARBOR HEALTHCARE SYSTEM A. Cha;

PURPOSE:Underreporting of adverse drug events (ADE) is a worldwide phenomenon that occurs commonly in hospitals. The objective of this study was to evaluate the impact pharmacist intervention has on inpatient adverse drug event reporting at the VA New York Harbor Healthcare System by the use of chart reviews and clinical staff education.

METHODS:Pharmacist intervention was performed by two different means in this study: chart reviews and education. The primary endpoint was the number of inpatient ADE reports entered using a multidisciplinary approach. The pharmacist collected weekly reports of PYXIS dispensing of 6 tracer drugs (diphenhydramine, hydrocortisone, protamine, phytonadione, naloxone and flumazenil) then conducted chart reviews on the identified patients. For the true ADEs that were not reported, the pharmacist entered a report into the VA computerized patient record system (CPRS). The other pharmacist intervention was education. In-services were held to educate nurses on what constitutes an ADE, and the pharmacist educated where to find the ADE consults in CPRS, because one barrier may be lack of knowledge on how to document correctly from new staff. In addition, ADE worksheets were distributed to transfer pertinent information into CPRS at a more convenient time. The worksheet also included detailed instructions on entering an ADE report. Inclusion criteria included all admitted patients who were administered a tracer drug that was removed from a PYXIS unit. Patients were excluded if they were administered a tracer drug that was NOT removed from a PYXIS unit, or if they were outpatients.

RESULTS:The number of ADE inpatient reports will be recorded and trend results will be presented.

CONCLUSIONS:It is anticipated this study will demonstrate that pharmacist intervention results in a significant increase of inpatient adverse drug event reporting.

[2p]

MEASURING THE EFFECT OF ACTIVE PHARMACIST SUPERVISION ON THERAPEUTIC OUTCOMES ASSOCIATED WITH ANTICOAGULATION THERAPY IN THE INPATIENT SETTING. N.ELTOUKHY; VA NEW YORK HARBOR HEALTHCARE SYSTEM N. Eltoukhy;

PURPOSE:Anticoagulants are commonly prescribed medications in the hospital setting. The current available agents all pose the risk of serious adverse events including fatal hemorrhaging. At present, many hospitals have established protocols for outpatient monitoring of anticoagulation therapy. There is a move to establish a similar organized structure for those patients in the inpatient setting based on The Joint Commission's National Patient Safety Goals (NPSG) for 2008. The main focus of this study is to develop monitoring policies and tools based on institution specific recommendations in accordance the NPSGs. The investigators will use these monitoring tools to evaluate the benefit of active pharmacist supervision by determining the number and types of potential pharmacist interventions.

METHODS:Medical records of inpatients on unfractionated heparin (UFH) or enoxaparin were reviewed. Investigators developed and used monitoring tools to evaluate the data collected. Data collection was taken from electronic medical records and included pertinent laboratory values as recommended by the American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition), current hospital policy and the institution's Health Failure Mode and Effect Analysis (HFEMA) committee.

RESULTS:The number and types of potential interventions will be recorded and results will be presented.

CONCLUSIONS:It is anticipated that this project will demonstrate that monitoring by pharmacists of inpatients on anticoagulants could potentially lead to a decrease incidence of adverse events and increase in desired therapeutic outcomes associated with the use of anticoagulation therapy.

[4p]

APPROPRIATE MONITORING AND TREATMENT OF METABOLIC ABNORMALITIES IN PATIENTS TREATED WITH SECOND-GENERATION ANTIPSYCHOTICS FOR SCHIZOPHRENIA IN THE VETERANS AFFAIRS NEW YORK HARBOR HEALTHCARE SYSTEM. KIM NGUYEN; VA NEW YORK HARBOR HEALTHCARE SYSTEM. K. Nguyen;

PURPOSE:To evaluate the metabolic side effects of second-generation antipsychotics in schizophrenic patients and whether these side effects are being appropriately monitored and treated.

METHODS:This study will be performed in the New York Harbor Healthcare System (NYHHS) Veterans Affairs Medical Center (VAMC). The computerized patient record system (CPRS) at this tertiary care institution will be used to identify patients with schizophrenia being treated with second-generation antipsychotics. Approximately 100 – 200 patients will be included in this study. Inclusion criteria include patients diagnosed with schizophrenia and treated with a second-generation antipsychotic. Patients will be excluded if they had established dyslipidemia or glucose intolerance prior to starting antipsychotic therapy or if they were on therapy for less than one year. The primary outcome is the percentage of patients developing metabolic abnormalities after initiation of second-generation antipsychotics and the change in weight, lipid profile and glucose level from baseline at four months and one year.

RESULTS:None to report at this time.

CONCLUSIONS:It is anticipated that this project will demonstrate a need for collaboration between pharmacists, psychiatrists, and primary care physicians in monitoring side effects secondary to second-generation antipsychotics.

COMPARISON OF ACTUAL SERUM CREATININE AND ADJUSTED SERUM CREATININE AND THE EFFECT ON DOSING OF VANCOMYCIN IN PATIENTS OVER 60 YEARS OF AGE. THEOLOGIA TERNAS; VA NY HARBOR HEALTHCARE SYSTEM T. Ternas;

PURPOSE:The concentration of serum creatinine (SrCr) is a function of creatinine production and renal excretion. Creatinine is a product of muscle metabolism; therefore its production is directly dependent on muscle mass. In the elderly there is a decrease in muscle mass which yields a lower production of creatinine. A common clinical practice used when calculating creatinine clearance (Crcl) using the Cockcroft and Gault (CG) equation is to adjust SrCr values of less than 1 to 1. One reason for the practice of rounding up SrCr value is to adjust for the decrease in muscle mass. The concern is the potential over-estimation of renal function if a low SrCr is incorporated into the equation. Using an over-estimation of renal function would influence antibiotic dosing, such as vancomycin. The validity of this practice has not been determined. On the other hand, studies have shown that prediction formulas, such as CG, underestimated measured GFR by at least 15%. The main objective is to determine if a clinical significant difference exists between dosing vancomycin based on Actual SrCr or Adjusted SrCr with the use of the CG Equation in patients 60 years and older.

METHODS:The computerized patient records system was utilized to identify patients who are 60 years of age and older, who have a SrCr values of less than 1, and have been administered vancomycin for at least 3 days. This will include hospital inpatients' records from 2005 until 2008.

RESULTS:The difference in dosing regimens and therapeutic drug levels will be recorded and the results will be presented.

CONCLUSIONS:It is anticipated that the use of adjusted Scr in the calculation of vancomycin may result in lower drug concentration that may have an impact on therapy, and clinical outcomes

ASSESSMENT OF LITERATURE EVALUATION SKILLS AMONG PHARMACY RESIDENTS S. Cogut;

PURPOSE:Evaluation and interpretation of primary literature is an essential skill of pharmacists. Drug therapy recommendations, drug-related protocols and guidelines, and formulary recommendations are largely based on results of clinical studies. Interpreting clinical studies involves assessing the appropriateness of study design, methodology, and statistical tests performed in order to determine the internal and external validity of the data. Questionnaire studies performed on medical residents demonstrated that literature evaluation skills are valued but are inadequately met, suggesting pharmacists have a role in assisting and leading healthcare professional colleagues in interpreting clinical study data. These skills are especially important among pharmacy residents who are future clinical pharmacists making drug therapy recommendations to multidisciplinary medical teams. The purpose of this project is to evaluate the knowledge of literature evaluation among pharmacy residents.

METHODS:This web-based questionnaire study surveyed pharmacy residents participating in the Eastern States Conference for Pharmacy Residents and Preceptors. Data were collected from January 2009 through March 2009. Pharmacy residents were contacted via e-mail providing a description of the questionnaire and a link to the questionnaire. Data collected included age, advanced degrees, years of undergraduate study, type of pharmacy residency program, type of institution, biostatistics courses previously taken, epidemiology courses previously taken, opinion on statistical knowledge, and answers to assessment questions on various areas of literature analysis.

RESULTS:The results of the questionnaire including percentage of questions answered correctly and correlation of respondent demographics to percentage of correctly answered questions will be presented.

CONCLUSIONS:It is anticipated that this project will demonstrate that pharmacy residents have a general understanding of literature analysis skills.

QUALITY PRACTICE REVIEW OF THE UTILIZATION OF SEDATIVE AGENTS IN A SURGICAL TRAUMA INTENSIVE CARE UNIT (STICU) A. Ormsby;

PURPOSE:The most recent clinical practice guidelines for sustained sedation recommend scheduled intravenous doses or continuous infusions to be utilized over "as needed" sedative regimens. However, new data suggest that this method results in more delirium, longer ICU stays, and less ventilator free days. To decrease the adverse effects of prolonged continuous infusions of benzodiazepines and propofol, intermittent bolus dosing is an alternative utilized to maintain adequate sedation while minimizing accumulation. In the STICU at UVaHS, utilization of continuous infusions of sedative agents have been the mainstay for critically ill patients requiring such medications. In February 2008, the STICU modified their standard practice to limit the use of continuous infusions. The purpose of this project is to determine the overall usage patterns of sedative agents with respect to bolus doses versus continuous infusions and the correlation of these usage patterns on STICU specific outcome variables such as length of ICU stay, days mechanically ventilated and economic impact.

METHODS:A retrospective analysis of charge data and unit specific outcome variables from the STICU will be assessed. Patients will be included if they are greater than 18 years of age, and received a continuous or bolus sedative regimen during the allotted months. There will be no patient exclusions.

RESULTS:The number of sedative boluses versus continuous infusions will be analyzed to determine cost, length of ICU stay and ventilator free days among patients and results will be presented.

CONCLUSIONS:It is anticipated that the results from this project will quantify the total cost savings that resulted from the implemented STICU guidelines.

THE USE OF ORAL VANCOMYCIN FOR THE TREATMENT OF CLOSTRIDIUM DIFFICILE C. Shirley;

PURPOSE:Infections due to *C. difficile* range from mild gastrointestinal colonization to serious disease resulting in pseudomembranous colitis, toxic megacolon, and death. The rate of *C. difficile* infection at UVaHS has doubled in the last year and more cases are being reported from patients in the community. This is in part due to a newly discovered hypervirulent strain thought to be the cause of several large outbreaks. Traditionally, oral metronidazole has been first line therapy for CDAD infections; however, recent data suggest treatment with oral vancomycin as first line therapy in select patients. Consequently, there is considerable treatment variability. The purpose of this project is to identify patients being treated with oral vancomycin and determine if these patients meet previously described definitions for severe CDAD. In addition, these data will be analyzed to identify specific predictors for patients with poor outcomes. Outcomes include recurrence/resolution of CDAD, surgical intervention due to CDAD, and death.

METHODS:A prospective analysis will be conducted on all inpatients receiving oral vancomycin. Data collection includes: demographics, temperature, pertinent laboratory, radiology, and endoscopy results, ICU/non-ICU status, prior and concurrent antimicrobial use, prior CDAD treatment, proton pump inhibitor and anti-motility agent use, bowel movement frequency, *C. difficile* toxin assay, and clinical outcomes. Patient specific characteristics will be compared to current literature definitions of severe CDAD. These data will be used to determine the percentage of patients from UVaHS who are receiving oral vancomycin for severe *C. difficile* based on these published trials. Subsequently, independent predictors will be identified for patients at UVaHS with severe *C. difficile* to assess the need for empiric oral vancomycin. Descriptive and inferential statistics will be used in data analysis.

RESULTS:Results will be presented.

CONCLUSIONS:Conclusions will be presented after data analysis.

IMPACT OF PHARMACISTS ON INFLUENZA IMMUNIZATION RATES AT A VETERANS AFFAIRS MEDICAL CENTER L. Garris;

PURPOSE:The Healthy People 2010 goals target immunization of 90% of noninstitutionalized adults aged 65 years and older. At the conclusion of the 2007-2008 influenza season, 75.6% of outpatients were vaccinated at the Veterans Affairs Maryland Health Care System (VAMHCS). Pharmacists play an important role in public health by serving as vaccine advocates, facilitators, and immunizers. A pharmacy initiative was established to incorporate pharmacists into the VAMHCS influenza vaccination program. An \$8,000 grant was received to train pharmacists to administer immunizations. The primary objective of this study is to determine if pharmacist involvement in influenza immunization increases the immunization rate of adult outpatients aged 65 years and older to 90% during the 2008-2009 influenza season. The secondary objective is to determine if pharmacist involvement in influenza immunization improves vaccination of all patients and employees at VAMHCS.

METHODS:Prior to commencement, this study will be submitted to the Institutional Review Board for approval. The Computerized Patient Record System will be used to identify patients who are eligible to receive the influenza vaccine between October 6, 2008 and March 31, 2009. A clinical reminder in the patient's electronic medical record will be turned on for each eligible patient to alert health care providers that the vaccine is due. The health care professional administering the vaccine must complete the clinical reminder for each patient at the time of administration of the vaccine. The clinical reminder data will be used to determine the percentage of eligible patients who received the vaccine.

RESULTS:As of August 2008, thirty pharmacists successfully completed the American Pharmacists Association Pharmacy-Based Immunization Delivery course and were certified to administer immunizations.

CONCLUSIONS:Pharmacist involvement as influenza vaccine advocates, facilitators, and immunizers is expected to increase influenza immunization rates at VAMHCS.

CASE-CONTROL ANALYSIS OF STRESS-DOSE CORTICOSTEROIDS AFTER EXPOSURE TO CARDIOPULMONARY BYPASS. C. ENSOR, S. VOILS, K. GUNNERSON, V. KASIRAJAN. VIRGINIA COMMONWEALTH UNIVERSITY HEALTH SYSTEM, RICHMOND, VA. C. Ensor;

PURPOSE:Cardiopulmonary bypass (CPB) is utilized in many cardiac surgery procedures to maintain peri-operative oxygen delivery to body tissues. Exposure to CPB evokes a post-perfusion syndrome in some patients. Some progress to the vasodilatory syndrome (VDS), characterized by low systemic vascular resistance that is resistant to traditional measures. Corticosteroids have been used to reduce cytokine release, slow leukocyte migration, and decrease capillary leak, associated with CPB. Unlike sepsis, large randomized controlled trials assessing corticosteroids in VDS have not been reported. The purpose of this study is to analyze the presence, or absence, of an association between cases and a shortened post-operative time to vasopressor or inotropic support liberation compared to controls.

METHODS:This case-control analysis received expedited approval from the institutional review board at VCUHS. This is a database and medical record review of 75 case and 75 control adult inpatients (≥ 18 years of age) that underwent coronary artery bypass grafting, and/or valve procedure, and were exposed to CPB from July 1, 2004-June 30, 2008. Cases are patients that met the inclusion criteria and received bolus dose corticosteroids within 24 hours following exposure to bypass. Controls are those patients that met the inclusion criteria and did not receive corticosteroids. Prisoners, pregnant women, and patients who received preoperative corticosteroids are excluded. The primary outcomes are time to liberation and cumulative dose of postoperative vasopressors and inotropes. Secondary outcomes are the incidence of post-operative atrial fibrillation, death, length of stay and safety profile. Univariate and multivariate logistic regression, chi-square, and descriptive statistics will be used to evaluate these parameters.

RESULTS:Study results remain under investigation. Outcomes will be assessed and results presented.

CONCLUSIONS:Study conclusions remain under investigation. Conclusions will be drawn and presented.

CARBOPLATIN DOSING EVALUATION: A SINGLE-CENTER EXPERIENCE G. Nightingale;

PURPOSE:The Calvert formula, defined as, $[\text{Carboplatin dose (mg)} = \text{Target AUC} \times (\text{Glomerular Filtration Rate (GFR)} + 25)]$ is the dosing method utilized for carboplatin chemotherapy. In clinical practice, GFR is commonly substituted with the Cockcroft and Gault equation to estimate renal function. A limitation of the Calvert formula is that the carboplatin dose can substantially vary depending upon the method utilized to calculate creatinine clearance (i.e. Cockcroft and Gault versus GFR), the documented serum creatinine and body weight (i.e. actual, ideal, corrected) applied within the estimated renal function equation. These surrogates for estimating renal function have been the center of controversy for subpopulations of underweight, overweight, and elderly patients. Creatinine clearance may be overestimated within these subpopulations and may lead to increased toxicities such as thrombocytopenia, treatment delays and subsequent dose reductions.

METHODS:This medication use evaluation has been approved by the University of Maryland Medical Center Pharmacy and Therapeutics Committee. We will conduct a retrospective, chart review. The primary objective of this evaluation is to evaluate trends in prescribing practices when calculating Carboplatin dosing with the Calvert formula. Specifically, we will identify the creatinine clearance formula utilized (i.e. Cockcroft and Gault versus GFR) to estimate renal function, the body weight (i.e. actual, ideal) applied to the creatinine clearance formula, the documented serum creatinine utilized, and whether a maximal/capped clearance rate was established. The secondary objective is to identify and assess the incidence of grade 3 or 4 thrombocytopenia per National Cancer Institute Common Toxicity Criteria for Adverse Events, treatment delays, and subsequent dose reductions. Our goal is to evaluate 50 patients. Descriptive statistics will be employed for all endpoints.

RESULTS:Results will be presented.

CONCLUSIONS:Conclusions will be presented.

EVALUATION OF CARBOPLATIN DOSING: THE USE OF VARIOUS WEIGHT DESCRIPTORS WHEN CALCULATING ESTIMATED CREATININE CLEARANCE USING COCKCROFT-GAULT M. Kessans;

PURPOSE:Carboplatin is an alkylating agent, which is incorporated into many chemotherapy regimens. It is traditionally dosed using the Calvert formula, which is based on glomerular filtration rate (GFR), determined by an estimated creatinine clearance, and a target area under the curve (AUC), to minimize the dose limiting toxicity of thrombocytopenia. The Cockcroft-Gault formula is the most common method used to estimate GFR, and originally, ideal body weight (IBW) was used in the formula. Clinical practice has changed to incorporate actual body weight (ABW) to determine creatinine clearance. Due to an increasing prevalence of obesity, there is concern of exposing patients to higher carboplatin doses. This could lead to an increased rate of thrombocytopenia requiring dose reductions or delays in therapy. The calculation of carboplatin dosing is not standardized at VCUHS, and weight descriptors are determined by physician preference. It is necessary to evaluate and standardize carboplatin dosing to ensure safe and effective treatment with carboplatin.

METHODS:This MUE was conducted on all adult patients that received combination therapy with carboplatin (AUC 5 to 6) and paclitaxel (175 – 225 mg/m²) or etoposide (100 mg/m²) every 3 weeks. Two hundred VCUHS patients were identified through the outpatient CAPS system for a two-year period, from August 1, 2006 to July 31, 2008. Forty-five patients were randomly selected for evaluation. The primary outcome measures include various weight descriptors used to calculate creatinine clearance for carboplatin dosing. The secondary outcome is to determine if independent risk factors predict therapy delays or dose reductions due to thrombocytopenia.

RESULTS:Patient outcomes remain under investigation, with data evaluation currently being conducted. The results will be presented.

CONCLUSIONS:It is anticipated that this project will demonstrate that obese patients will have an increased frequency of thrombocytopenia leading to dose reductions or delays in therapy.

SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS AND EXACERBATION OF HEART FAILURE IN A VETERAN POPULATION E. Kuskamp;

PURPOSE: Many medications have been implicated in the pathophysiology of heart failure (HF) by increasing systemic levels of norepinephrine (NE) leading to increased heart rate, vasoconstriction, and cardiac remodeling—all which may exacerbate HF. The serotonin-norepinephrine reuptake inhibitors (SNRIs) venlafaxine and duloxetine increase systemic levels of NE, thus they too may exacerbate HF. The literature identifies two case studies in which the SNRIs were implicated in the exacerbation of heart failure. The primary purpose of this study is to determine the hospital admission rate at the Salem Veterans Affairs Medical Center (VAMC) due to heart failure exacerbation in veterans taking a SNRI. The secondary purpose is to assess changes in heart rate, blood pressure, B-type natriuretic peptide (BNP) and other clinical markers of worsening HF from initiation of SNRI therapy.

METHODS: A retrospective chart review will be conducted using the VAMC electronic medical record system. The number of hospital admissions due to exacerbations of HF in veterans on the SNRIs, venlafaxine or duloxetine, will be determined. Patients will be identified via a FileMan search for prescriptions for venlafaxine or duloxetine from August 2006 to August 2008; patients identified will be screened for a clinical diagnosis of HF by echocardiogram results and ICD-9 codes for heart failure. These patients will be compared to a matched-case control consisting of veterans with HF who are not receiving venlafaxine or duloxetine therapy. Data to be collected include admitting diagnosis, blood pressure, heart rate, BNP, left ventricular ejection fraction, concomitant diagnoses, and confounding outpatient medications.

RESULTS: The number of hospital admissions due to HF exacerbation during venlafaxine or duloxetine therapy will be recorded, along with secondary endpoints. Results will be presented.

CONCLUSIONS: It is anticipated that this project will demonstrate a trend toward increased HF exacerbations in patients with SNRI therapy.

COMPARISON OF LEVALBUTEROL AND RACEMIC ALBUTEROL BASED ON CARDIAC ADVERSE EFFECTS L. Locastro;

PURPOSE: To compare the cardiac safety of levalbuterol and racemic albuterol based on changes in heart rate in pediatric patients.

METHODS: The medical records of patients who received either racemic albuterol or levalbuterol via nebulizer for 3 consecutive doses between January 2006 and December 2008 will be reviewed. Children aged 1 month to 12 years admitted to the general pediatric unit who received either racemic albuterol or levalbuterol via nebulizer given in three consecutive treatments will be included. Patients will be excluded due to lack of data (i.e. missing pre or post-dose heart rate, age), underlying chronic cardiac condition (i.e. arrhythmias, Wolff-Parkinson-White Syndrome), intubation, concurrent administration of beta blockers, vasopressors, or racemic epinephrine, and bronchodilator therapy administered less frequent than 4 hours. The documented heart rate will be collected prior to the bronchodilator therapy and after therapy. Patients will be stratified by baseline tachycardia and no baseline tachycardia. Tachycardia will be defined as heart rate greater than the 98th percentile for age. The primary outcome will be percent change in heart rate from pre to post dose. Secondary outcomes will be incidence of tachycardia post bronchodilator therapy, and number of patients with a greater than 10% change in heart rate. Descriptive data will be analyzed by chi-squared and nominal data will be compared using student t-test. Repeated measures ANOVA will be used to analyze the primary endpoint. Based on the primary endpoint, the sample size required for 80% power is 17 patients per treatment group assuming a change of 15% between groups with a standard deviation of 15.

RESULTS: To be reported

CONCLUSIONS: To be reported

LORAZEPAM IN ASSOCIATION WITH THE PRESENTATION OF DELIRIUM IN MECHANICALLY VENTILATED PATIENTS A. Smith;

PURPOSE: Benzodiazepines are historically the preferred adjunctive agents for delirium that is not well-controlled with an antipsychotic alone. Lorazepam is favored because of its rapid onset, shorter duration of action, and low risk of accumulation. In the elderly, however, overuse of this medication can precipitate delirium, leading to over-sedation, exacerbation of confusion, and respiratory suppression. A retrospective review of the facility's use of lorazepam and its effects on intensive care unit (ICU) patients' mental and physical state could provide insight into the appropriateness of existing sedation treatment protocols.

METHODS: Electronic medical records of patients admitted to the ICU and placed on mechanical ventilation during a two-year period were reviewed. A random sample of all patients with active orders for lorazepam were reviewed for date and reason for admission, assessment scores (Richmond Agitation and Sedation Scale (RASS) and the Confusion Assessment Method in the ICU (CAM-ICU)), lorazepam drip dose, use of other sedatives (morphine, fentanyl, propofol, dexmedetomidine, haloperidol, and midazolam), presentation of delirium signs and symptoms, and occurrence of daily awakenings.

RESULTS: The number and percentage of patients experiencing delirium or coma will be recorded and results will be presented.

CONCLUSIONS: It is anticipated that this project will demonstrate a higher rate of delirium and coma in the population medicated with lorazepam drip than is historically expected for mechanically ventilated patients in the ICU.

CHARACTERIZATION OF Raltegravir USE IN AN INFECTIOUS DISEASE CLINIC AT A LARGE ACADEMIC INSTITUTION L. Hynicka;

PURPOSE: With only 25 Federal Food and Drug Administration (FDA) approved antiretrovirals available, treatment resistant viruses continue to develop, limiting available therapeutic options. In light of the current HIV resistance patterns, novel antiretroviral agents with unique mechanisms of action are necessary. A recently approved antiretroviral, raltegravir, halts HIV viral replication by inhibiting the activity of the integrase enzyme. Currently, raltegravir is recommended for use as part of a HAART regimen in the treatment experienced HIV patient. With the data available in treatment naïve patients, a characterization of current raltegravir prescribing practices is warranted for the VCUHS HIV/ID clinic.

METHODS: This MUE will be a retrospective, medical record review conducted in adult patients (≥ 18 years) that have received a prescription for raltegravir in the infectious disease clinic between October 2007 and August 2008. Medical records will be reviewed for patient demographic information, genotypic sensitivity score (GSS), phenotypic sensitivity score (PSS), CD4 cell count, HIV-1 RNA levels, history of opportunistic infections or AIDS-defining cancers, prior history of antiretroviral use, adverse reactions and drug-drug interactions experienced during the duration of raltegravir therapy. Descriptive statistics will be utilized to evaluate these parameters.

RESULTS: Data evaluation and evaluation is currently underway.

CONCLUSIONS:

[136p]

ENOXAPARIN DOSE ADJUSTMENTS BASED ON ESTIMATION OF RENAL FUNCTION: COCKROFT-GAULT EQUATION (CG) VS. THE MODIFICATION OF DIET IN RENAL DISEASE EQUATION (MDRD L. Zendel;

PURPOSE:In light of the NPSG3E requirements, the use of anticoagulants has been reviewed. Adverse effects that may have resulted from the use of the MDRD equation instead of the CG equation to estimate renal function to determine enoxaparin dose have been reported. Traditionally, the standard measurement of kidney function for dosing purposes is the CG estimation of creatinine clearance (CrCl) which has been recommended by the FDA for use in pharmacokinetic studies of patients with impaired renal function. More recently, the National Kidney Foundation in the K/DOQI guidelines has promoted the use of the MDRD equation to provide an estimate of glomerular filtration rate (GFR) to determine the staging of chronic kidney disease and has advocated that MDRD may be a more accurate estimate of actual renal function. The objective of this study is to investigate the difference in outcomes as determined by anti-Xa levels and bleeding complications when dosing enoxaparin for renal impairment using the CG equation vs. the MDRD equation.

METHODS:This study was submitted and approved by the Institutional Review Board. The design is observational and prospective, including patients with a CrCl < 30 ml/min as calculated by CG concurrently receiving enoxaparin. Dialysis patients and patients with acute kidney injury will be excluded from the study. Anti-Xa levels will be ordered per clinical practice guidelines. The anti-Xa levels will be evaluated for efficacy of the enoxaparin dose and to ascertain any association between increased levels and adverse effects. Renal function will be calculated using both CG and MDRD. Differences in the results will be analyzed. Adverse events will be assessed with special attention to patients in which the use of MDRD instead of CG would have resulted in a different dose.

RESULTS:Data collection has been initiated.

CONCLUSIONS:Based on results, changes may be made to hospital practice guidelines to further improve patient safety.

[144p]

AN EVALUATION OF MEDICATION ADHERENCE AND APPROPRIATENESS IN OLDER COMMUNITY DWELLING RESIDENTS L. Onunka;

PURPOSE:Medication related problems secondary to inappropriate prescribing and non-adherence are complex issues that render medication management of older community dwelling residents a difficult task. In order to evaluate medication appropriateness, tools such as the Medication Appropriateness Index (MAI) were developed to provide pharmacists and other health care providers with a standardized and objective method to assess the appropriateness of medication use. In order to optimize medication adherence various devices such as pillboxes, calendars, and personalized automated dispensing devices have been developed. The purpose of this project is to evaluate medication adherence and determine the appropriateness of medications used by older community dwelling residents enrolled in a pillbox program.

METHODS:This research study is a collaborative effort between two residents. It is a prospective, descriptive analysis of medication adherence and appropriateness in the same sample of patients. Persons to be included in this study are those enrolled in a weekly pillbox program with NeighborCare Pharmacy at Charlestown and Oakcrest Retirement Communities, English speaking with a working telephone, taking at least 5 medications and greater than 65 years of age. Facility medical records and face-to-face interviews with patients or their caregivers will be conducted to elicit pertinent demographic data along with past medical histories, medication histories and pertinent laboratory data. Weekly pillbox reviews will be conducted to evaluate missed doses of medications. The MAI tool will be used to determine medication appropriateness. The intervention group will be evaluated for both adherence and appropriateness, while the control group will only be assessed for adherence.

RESULTS:Medication adherence will be assessed and appropriateness will be determined. Results will be presented.

CONCLUSIONS:To be determined pending results.

[143p]

RETROSPECTIVE EVALUATION OF PEDIATRIC PATIENTS WITH STAPHYLOCOCCUS AUREUS BACTEREMIA AND INCIDENCE OF VENOUS THROMBOEMBOLISM M. Wilson;

PURPOSE:Venous thromboembolism (VTE) is a relatively uncommon occurrence in children. However, one of the most common risk factors seen in children and neonates is the use of a central venous line (CVL). In recent studies, there has been an increased association between VTE and Staphylococcus aureus (S. aureus) bacteremia. The primary objective of this study is to determine the incidence of VTE formation in pediatric patients with S. aureus bacteremia in a tertiary medical center. Secondary objectives include: determining the incidence of VTE formation in methicillin-resistant S. aureus (MRSA) versus methicillin-susceptible S. aureus (MSSA) bacteremia and identifying risk factors associated with VTE formation and S. aureus bacteremia in pediatric patients.

METHODS:A retrospective chart review was conducted in pediatric patients with a positive blood culture of S. aureus between January 2004 and September 2008. Patients were eligible if they were less than or equal to 18 years of age with a positive blood culture of S. aureus. Patients were excluded if they had a prior history of VTE, a diagnosis of heparin induced thrombocytopenia, or a positive blood culture of coagulase negative Staphylococcus. Patients identified to have had a positive blood culture were divided into two groups based on the presence of a VTE. Specific ICD-9 codes and therapies were used to identify these patients. Patients were further divided based on the presence of MRSA or MSSA bacteremia.

RESULTS:Pending

CONCLUSIONS:

[146p]

SAFETY OF ENOXAPARIN FOR THE PREVENTION OF VENOUS THROMBOEMBOLISM IN ELDERLY PATIENTS WITH LOW BODY WEIGHT T. Christopher;

PURPOSE:Clinical practice guidelines recommend the use of enoxaparin 30mg subcutaneous (SC) every 12 hours for the prevention of venous thromboembolism (VTE) for trauma patients in the absence of a major contraindication. However, major trauma trials validating the use of enoxaparin 30mg SC every 12 hours had a mean patient age of approximately 40 years. The dosing of enoxaparin for VTE prophylaxis in elderly trauma patients is not well defined. Studies of geriatric medical / surgical patients using enoxaparin 40mg SC daily associated renal failure and weight < 50kg with significantly higher anti-Xa levels. Elevated anti-Xa levels may put the patient at a higher risk for bleeding. The intent of this study is to compare the safety of enoxaparin for VTE in elderly trauma patients with a low body weight to those with a normal body weight.

METHODS:This is a retrospective, cohort study of 240 patients from July 1, 2003 to June 30, 2008. Patients were identified using the AGH Trauma Registry for age ≥ 70 years, extremity fracture, documented weight and charge for enoxaparin 30mg or 40mg syringe. Patients weighing ≤ 60kg are assigned to the study group and those weighing 61-90kg will serve as the control. Patients were matched based on sex and year of admission. Demographic and clinical characteristics between groups will be compared using the independent samples t test and the chi-square test. The number of major hemorrhagic events, thrombotic events and transfusions will be compared using the chi square or Fischer's exact test.

RESULTS:Hemorrhagic events, thrombotic events and number of red blood cell units transfused will be collected and results will be presented.

CONCLUSIONS:It is anticipated that patients with low body weight will have more hemorrhage events and require more transfusions of red blood cells.

[147p]

THE EFFECT OF PHARMACIST-INITIATED INTERVENTION ON ADHERENCE TO POST-MYOCARDIAL INFARCTION DISCHARGE MEDICATION GUIDELINES E. Mahone;

PURPOSE:The risk of additional cardiovascular complications for patients who survive acute myocardial infarction (AMI) is extensive. Over the last 30 years, the use of certain medication classes has led to a dramatic decline in the morbidity and mortality associated with AMI. As a result, the American College of Cardiology (ACC) and the American Heart Association (AHA) have developed guidelines and performance measures to ensure that health care providers offer evidence-based care to post-MI patients. Many of the recommendations put forth by the ACC/AHA involve the appropriate use of multiple medication classes prior to discharge. Health-system pharmacists are in an ideal position to positively influence adherence rates to these guidelines.

METHODS:The MJH ACC National Cardiovascular Data Registry records were reviewed for all AMI patients from October 2007 to September 2008 to establish current adherence rates to ACC/AHA guidelines concerning discharge medications. Pharmacists were provided with education and reference documents to assist them in patient assessment and intervention with aspirin, beta-blockers, angiotensin converting enzyme inhibitors (ACEi) or angiotensin receptor blockers (ARB), statins, and thienopyridines. For a two month period, pharmacists evaluated each patient with a positive troponin I level and a diagnosis of AMI for the appropriate utilization of the aforementioned medication classes prior to discharge. The absolute percentage of patients receiving each of those five classes of medications during the study period was then compared with the percentages observed during the previous year.

RESULTS:A small but noteworthy increase in the percentage of patients discharged on beta-blockers, ACEi or ARBs, statins, and thienopyridines is expected. Results will be presented.

CONCLUSIONS:It is anticipated that pharmacist-initiated intervention on the discharge medications for AMI patients will prove to be a viable option to increase overall adherence to ACC/AHA performance measures.

[159p]

THE RELATIVE DOSE INTENSITY OF CHEMOTHERAPEUTIC REGIMENS C. Timlin;

PURPOSE:Relative dose intensity (RDI) is the concept of relating actual dose and schedule of chemotherapy delivered to the intended dose and schedule of the standard chemotherapy regimen. Clinical studies in the adjuvant setting have identified that patients who receive at least 85 percent of their planned chemotherapy dose have a higher overall and relapse-free survival rates. The intent of this study is to determine the percentage of planned dose intensity of chemotherapy that patients received with the factors contributing to a reduced RDI.

METHODS:This study was a retrospective analysis of patients who received chemotherapy treatment for curative intent at the WPAON outpatient oncology clinic in Pittsburgh, Pennsylvania during a one year period. Data was collected to determine the neoplasm, chemotherapy regimen, planned and completed chemotherapy, the RDI of the chemotherapeutic regimen, reasons for reductions or delays in therapy and supportive therapies utilized. Established factors for a reduced RDI will be compared to those identified at our institution. Toxicities of treatment and the supportive care utilized to prevent toxicities will be evaluated to determine its correlation with RDI.

RESULTS:The percentage of patients that received a RDI less than 85 percent will be recorded. Additional results will be presented on the contributing factors to RDI, the incidence of severe and febrile neutropenia, and the impact of growth factors in supportive care.

CONCLUSIONS:It is anticipated that this project will identify the percentage of patients receiving a RDI of 85 percent, factors that contribute to a patient receiving a RDI less than 85 percent and evaluate the benefit of implementing a growth factor support protocol at this institution.

[155p]

PILOT STUDY ON THE EFFECT OF ANGIOTENSIN-CONVERTING ENZYME INHIBITORS AND ANGIOTENSIN II RECEPTOR BLOCKERS ON COGNITIVE FUNCTION IN CARDIAC SURGERY PATIENTS M. Nguyen;

PURPOSE:Over three hundred thousand coronary artery bypass graft (CABG) surgeries are performed each year in the United States, 54 percent of these being performed in patients over the age of 65. A concept that has been suggested by several studies is that atherosclerosis may predispose patients to cognitive impairment, and there is growing literature to document that elderly patients are more susceptible to surgical complications and neurologic changes after CABG. Another concept that has recently emerged is the possible relationship between certain components of the renin-angiotensin system (RAS) and cognitive function. The objective of this retrospective study is to determine whether the use of angiotensin converting enzyme inhibitors (ACEIs) or angiotensin-II receptor blockers (ARBs) is protective for cognitive function after cardiac surgery.

METHODS:A retrospective analysis will be performed on an existing database from a previously IRB-approved study titled "Functional and Cognitive Recovery after Surgery." Subjects underwent cardiac surgery between September 2002 and June 2006 and had neuropsychological testing pre-surgery as well as at 1, 6 and 12 months post-surgery. Patients will be divided into two comparison groups, those exposed to ACEIs and/or ARBs prior to surgery and those not exposed. Baseline scores from four components of the neuropsychological exam will be compared to scores 12 months post-surgery. The following data will be collected: age, exposure to ACEIs and/or ARBs prior to and post-surgery as a dichotomous variable (if exposed, duration of exposure will also be documented), scores from the four components of the neuropsychological exam, as noted above, at baseline and at 12 months post-surgery, and presence of the following concomitant disease states: diabetes, hyperlipidemia, hypertension. Data will be recorded without patient identifiers and maintained confidentially.

RESULTS:Pending

CONCLUSIONS:Pending

[160p]

HOME INFUSION AND HEART FAILURE: EVALUATING QUALITY OF LIFE. A. Sardone;

PURPOSE:There is debate over which patients would benefit most from home infusion of inotropic therapy along with which regimen is most advantageous. An example being that continuous infusions of dobutamine have been associated with medication tolerance leading to decreased efficacy, while intermittent infusions may increase the occurrence of sudden death in heart failure patients (2,3).

METHODS:The MLHFQ will permit us to do a concurrent evaluation of heart failure patients receiving IV inotropic therapy. The study will also require implementing a retrospective chart review. The questionnaire will be administered via telephone conversations every 4 weeks. All home inotropic patients under the care of Critical Care Systems will be considered for evaluation. The inclusion criteria are as follows: patients currently receiving IV inotropic therapy for a current diagnosis of heart failure NYHA class I-IV, terminal heart failure or those being bridged to transplant. The results will be documented and evaluated upon completion of the MLHFQ. Considerations will be made for patient specific data including but, not limited to, NYHA classifications, medication regimens and time since diagnosis.

RESULTS:Since initiation of this study, the investigators have encountered challenges in the timely collection of survey data, including failed repeated attempts to administer the MLHFQ via phone, and other coordination challenges with outside entities that are crucial to the success of this project. To compensate for these variables we adjusted the procedures and methods of data collection in a manner that is better suited to promote consistency throughout the study. The initial and follow up surveys are now being conducted by staff in the infusion branches as part of ongoing patient care coordination and assessment. Results of these surveys will be collated by the investigators and analyzed as originally intended. Findings will be reported.

CONCLUSIONS:

COMPLICATIONS ASSOCIATED WITH PERIPHERALLY INSERTED CENTRAL CATHETER IN HYPEREMESIS GRAVIDARUM K. Patel;

PURPOSE:Controversy surrounds the use of peripherally inserted central catheter (PICC) lines in pregnant patients with a number of recent publications demonstrating a potentially higher significant risk of complications. The objective of this project is to evaluate the potential complication rates associated with PICC lines in HG patients receiving home parenteral therapies as part of their peripartum care.

METHODS:Data collection methodology is via retrospective and concurrent chart review. Patient selection criteria are those receiving home TPN, hydration, anti-emetics or other intravenous therapies which require PICC access for safety and continuity of care. Specific data has been collected and evaluated to assess the different types of complications encountered and rate of incidence as compared to the larger cohort of all company patients with PICC lines receiving care. Data has been extracted from available electronic patient records starting in 2004 and through the completion of the study in 2009. These records include the type of therapy, access, and outcomes of therapy including any access-related complications.

RESULTS:Preliminary data analysis as of February 12, 2009 for 426 patients shows that 110 patients had or have PICC access. Of these 110 patients, 8297 days have been tabulated as no complications, versus 169 days with complications that resulted in therapy change and/ or access change. These include line infection, blood clot, neck and chest discomfort, insertion site tenderness and unknown documentation of complication.

CONCLUSIONS:Preliminary results suggest a 2% incidence of PICC complications in HG patients. Further analysis to compare this to company patients with PICC lines receiving care is in progress.

ANALYSIS OF THE TIME TO FIRST DOSE OF ANTIBIOTICS FOR PATIENTS ADMITTED WITH PNEUMONIA AT MARTHA JEFFERSON HOSPITAL M. Ofori;

PURPOSE:Over the last few years, Martha Jefferson Hospital (MJH) has not reached its benchmark for the fulfillment of one of the core measurements for pneumonia; the time to first dose of antibiotics. A retrospective study of Medicare patients hospitalized with community-acquired pneumonia (CAP) indicated that mortality rates were 0.6% lower for patients who received the first dose of antibiotics within 4 hours. The purpose of this study is to identify areas of the medication administration process at MJH that may delay our ability to administer the first dose of antibiotics to our CAP patients.

METHODS:Analyzed data from randomly-selected CAP patients surveyed monthly by the Performance Improvement Department of MJH from October 2007 through February 2009. Medical records of these patients were assessed for their times of arrival, times medications were ordered, administration times, and other pertinent data. The data analysis should identify potential points of delay. Further analysis and observation of potential delay points will then occur.

RESULTS:Results from this study are pending the evaluation of data collected from medical records.

CONCLUSIONS:Upon completion of this study, we hope to eliminate or reduce the duration of any steps in our process of administering the first dose of antibiotics for patients admitted with pneumonia. Our ability to meet this benchmark should improve patient care.

ENOXAPARIN DOSE ADJUSTMENTS BASED ON ESTIMATION OF RENAL FUNCTION: COCKROFT-GAULT EQUATION (CG) VS. THE MODIFICATION OF DIET IN RENAL DISEASE EQUATION (MDRD) M. Poore;

PURPOSE:A fundamental component of the Joint Commission's 2008 national patient safety goals involves the safe use of anticoagulants (NPSG3E). In light of the NPSG3E requirements, the use of anticoagulants has been reviewed. Adverse effects that may have resulted from the use of the MDRD equation instead of the CG equation to estimate renal function to determine enoxaparin dose have been reported. Traditionally, the standard measurement of kidney function for dosing purposes is the CG estimation of creatinine clearance (CrCl) which has been recommended by the FDA for use in pharmacokinetic studies of patients with impaired renal function. More recently, the National Kidney Foundation in the K/DOQI guidelines has promoted the use of the MDRD equation to provide an estimate of glomerular filtration rate (GFR) to determine the staging of chronic kidney disease and has advocated that MDRD may be a more accurate estimate of actual renal function. The objective of this study is to investigate the difference in outcomes as determined by anti-Xa levels and bleeding complications when dosing enoxaparin for renal impairment using the CG equation vs. the MDRD equation.

METHODS:Prior to commencement, this study will be submitted to the Institutional Review Board for approval. The design will be observational and prospective, including patients with a CrCl < 30 ml/min as calculated by CG currently receiving enoxaparin. Dialysis patients and patients with acute kidney injury will be excluded from the study. Anti-Xa levels will be ordered per clinical practice guidelines. The anti-Xa levels will be evaluated for efficacy of the enoxaparin dose and to ascertain any association between increased levels and adverse effects. Renal function will be calculated using both CG and MDRD. Differences in the results from the two equations will be analyzed. Adverse events will be assessed with special attention to patients in which the use of MDRD instead of CG would have resulted in a different dose of enoxaparin. Data will be stratified for age, sex, weight and level of renal dysfunction.

RESULTS:Data will be collected and analyzed.

CONCLUSIONS:Based upon results, changes may be made to hospital practice guidelines to further improve patient safety.

CLINICAL UTILITY OF NARES SWABS AS A PREDICTOR OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS PNEUMONIA J. Pollock;

PURPOSE:The purpose of this study is to determine the incidence of pneumonia in patients with MRSA positive respiratory and nares cultures. This study will also determine the utility of surveillance nares cultures as a predictor for the development of MRSA pneumonia.

METHODS:This study is a retrospective analysis of nares cultures obtained from March 1, 2008 through October 31, 2008 and retrospective chart review of patients and cultures correlated with nares samples described above. The study was conducted in the inpatient setting of Charleston Area Medical Center (CAMC) Memorial Hospital and CAMC General Hospital in Charleston, West Virginia. All patients 18 years or older admitted to CAMC General Surgical Trauma Intensive Care Unit or CAMC Memorial Surgical Intensive Care Unit on or after March 1, 2008 were reviewed. Patients with clinical diagnosis of pneumonia and surveillance nares cultures were included in the study. A correlation analysis was conducted to determine the utility of surveillance nares cultures as a predictor of MRSA pneumonia.

RESULTS:Data collection is ongoing, but results and conclusions will be available for the Eastern States Conference. Data will be reported on the following endpoints: nares culture results, respiratory culture results, and ICD-9 codes to determine clinical diagnosis of pneumonia. This study seeks to find a correlation between MRSA positive nares cultures and clinical diagnosis of MRSA pneumonia. This information may help guide clinicians in their empiric selection of antibiotics, which will ultimately decrease morbidity, mortality and hospital stay and potentially reduce the frequency in which patients are exposed to antimicrobials for MRSA unnecessarily.

CONCLUSIONS:Pending data analysis, this study will help determine the utility of surveillance nares cultures as a positive predictor of MRSA in clinically diagnosed pneumonia.

[218p]

MORTALITY RISK FACTORS ASSOCIATED WITH CRITICALLY ILL PATIENTS: A RETROSPECTIVE STUDY A. Wang;

PURPOSE:To determine and compare the specific mortality risk factors for critically ill patients admitted to the Medical Intensive Care Unit in an urban hospital.

METHODS:This study was approved by the Institutional Review Board. We will review the medical charts of all eligible patients between January 1, 2007 and December 31, 2007. Information regarding demographics, reasons for admission to the ICU, infectious organisms, antibiotics used, and length of antibiotic therapy will be collected.

RESULTS:Data on antibiotic utilization was collected in 11 patients. Inappropriate initial antibiotics were administered to 3 patients. Appropriateness of empiric antibiotics was unable to be determined in 2 patients. Otherwise, appropriate empiric antimicrobial treatment was utilized. Data on renal function was collected in 13 patients. Out of that, nine patients developed ARF during ICU stay. Full results of study are pending.

CONCLUSIONS:Inappropriate empiric antibiotic therapy, SIRS and developing AKI may be risk factors for mortality in critically ill patients. More conclusive results are pending.

[243p]

ASSESSMENT OF VANCOMYCIN DOSING AND THERAPEUTIC DRUG LEVEL MONITORING STRATIFIED BY PATIENT WEIGHT S. Narra;

PURPOSE:The primary purpose of this study is to assess the necessity of weight-based loading doses for patients being treated for gram positive infections with the intravenous medication vancomycin, particularly for those patients whose weight is greater than 65 kg.

METHODS:Previous data has suggested weight-based loading doses of 15 mg/kg result in more rapid achievement of appropriate therapeutic levels in critically ill patients. A recent consensus review of vancomycin therapeutic monitoring states vancomycin trough targets should be 10 mg/dL at minimum (and elevated further to 15 mg/dL for select situations) and suggests increased time required to achieve target vancomycin trough levels may result in poorer outcomes (and possibly induce resistance). Therefore, patients initiating therapy with vancomycin for gram positive infections should begin the course with a weight-based loading dose, as opposed to a standard initiation of one gram, to ensure optimal therapy. Electronic records from May 1, 2008 until January 31, 2009 will be scanned for the use of vancomycin. Patients greater than 18 years of age with normal kidney function who have received a minimum of three doses of vancomycin and whose trough levels were assessed at least twice through the course of therapy will be included. These patients will then be stratified according to weight categories and assessed for the duration of time required to achieve trough levels (including any required dose increases) of greater than 10 mg/dL.

RESULTS:Based on the above data, expected results would show patients greater than 65 kg would require dosage adjustments to increase trough levels to achieve therapeutic concentrations and are at increased risk of developing resistant organisms.

CONCLUSIONS:Dependent on the outcome of this study, the conclusion expected would indicate that patients greater than 65 kg at this institution would require a loading dose based on actual body weight to achieve therapeutic levels of vancomycin rapidly.

[237p]

PRIOR AUTHORIZATION OF LOW-DOSE QUETIAPINE: EFFECTS ON UTILIZATION AND BEHAVIORAL HEALTH CARE COSTS E. Lopata;

PURPOSE:To determine the impact of a prior authorization on utilization of quetiapine doses of 200mg or less and the medical cost associated with the denial of quetiapine for members who do not meet the criteria.

METHODS:A retrospective claims analysis will be conducted using de-identified pharmacy and medical claims from UPMC Health Plan, a large managed care organization in western Pennsylvania. The study will look at total quetiapine use and quetiapine use in doses of 200mg or less during the time period of nine months prior to implementation of the PA, April 1, 2007 through December 31, 2007, and compare the values to the time period of nine months after implementation of the PA, January 1, 2008 – September 30, 2008. The study will also analyze the change in medical costs for behavioral health services for members who were denied requests for quetiapine doses of 200mg or lower through the PA process for between the two nine month periods.

RESULTS:The number of prescriptions for low-dose quetiapine and the number of unique members that have filled a prescription for low-dose quetiapine will be determined for each of the 2 time periods, and the results will be presented.

CONCLUSIONS:It anticipated that this project will demonstrate the ability of a prior authorization on low-dose quetiapine to reduce off-label use of the medication, while not adversely affecting patients denied the medication due to inappropriate use.

[248p]

THE CORRELATION BETWEEN FLUOROQUINOLONE USAGE AND SUBSEQUENT NOSOCOMIAL CLOSTRIDIUM DIFFICILE M. Novell;

PURPOSE:This study's primary objective was to determine the correlation between inpatient fluoroquinolone use and the incidence of Clostridium difficile-associated diarrhea at Charleston Area Medical Center (CAMC). Secondary objectives were to evaluate of the total days of fluoroquinolone received, assess the length of time at risk for CDAD, evaluate adverse consequences that result from the development of CDAD and determine the significance of choice of fluoroquinolone (ciprofloxacin, levofloxacin, moxifloxacin), route of administration of fluoroquinolone therapy (oral versus intravenous), inpatient location at time of diagnosis (ICU versus floor), and primary service on the development CDAD.

METHODS:A retrospective case control study of adult patients tested for Clostridium difficile between July 1, 2007 and July 31, 2008 was conducted. Control patients were matched on a 1:1 basis according to inpatient location, gender, age, and admission date. A sub-analysis of CDAD patients who received fluoroquinolones was conducted to determine the significance of fluoroquinolone choice, route of administration, inpatient location, and primary service on developing C.difficile. Patients less than age 18 years old, pregnant, with a documented allergy to fluoroquinolones, had fluoroquinolone therapy initiated by a source outside of CAMC, or had a diagnosis of C. difficile before fluoroquinolone initiation were excluded from this study.

RESULTS:To be presented

CONCLUSIONS:It is anticipated that this study will help identify any correlation that may exist between the use of fluoroquinolones and the incidence of C. difficile at CAMC, as well as identify possible areas of opportunity for antimicrobial stewardship.

[265p]

DEVELOPMENT AND IMPLEMENTATION OF A SEDATION PROTOCOL TO FACILITATE MECHANICAL VENTILATION WEANING K. Branham;

PURPOSE:Critically ill patients experience many types of distress within the ICU, such as pain from injuries, procedures, and routine medical care. Distress may also originate from withdrawal syndromes, mechanical ventilation (MV), and ICU associated agitation or delirium. In general, MV patients require the use of sedatives and analgesics for comfort. The Society of Critical Care Medicine (SCCM) published guidelines in 2002 regarding the use of sedatives and analgesics in the ICU patient population. Within the guidelines, the authors provided an algorithm that focused on medication selection, initiation, and titrations that should be used in MV patients. The algorithm is helpful for the initiation and maintenance phases of sedation and analgesia; however, it lacks specific recommendations for tapering these medications when weaning MV.

METHODS:An evidence-based algorithm will be developed addressing utilization, titration, and discontinuation of sedatives and analgesics in the peri-extubation period in surgical-trauma intensive care unit (STICU) patients. The algorithm will address multiple patient conditions and medications utilized prior to extubation attempts and will be utilized concurrently with the existing ventilator weaning protocol. All adult STICU patients who meet MV weaning criteria will be eligible for inclusion. Retrospective data collection will occur twice, with 30 patients composing pre- and a post-guideline implementation groups. The primary outcome measure is the ability to maintain RASS scores within the patient's target range during ventilator weaning. Secondary outcomes are the duration of MV upon initiation of MV weaning and markers of over or under-sedation.

RESULTS:Data collection and analysis are currently being conducted and patient outcomes will be presented at a later date.

CONCLUSIONS:It is anticipated that utilizing a sedation weaning protocol concomitantly with the STICU ventilator weaning protocol will result in achieving goal RASS score ranges.

[274p]

ASSESSMENT OF ADHERENCE ON THE USE OF ORAL VANCOMYCIN FOR CLOSTRIDIUM DIFFICILE GUIDELINES AT VCUHS J. Frumin;

PURPOSE:In November 2007, Virginia Commonwealth University Health System (VCUHS) developed guidelines for initial use of oral vancomycin for Clostridium difficile infection. Oral vancomycin therapy is recommended for patients with positive Clostridium difficile toxin and the presence of any one of the following criteria: age > 60, intensive care unit (ICU) location, endoscopic evidence of pseudomembranous colitis, small bowel obstruction, or ileus; or the presence of two of the following: temperature > 38.8 degrees Celsius, albumin < 2.5 g/dL, or white blood cell (WBC) count >15,000 cells/mm³; or two failed courses of metronidazole therapy. The objectives of this study are to assess the use of oral vancomycin in relation to the current VCUHS guidelines, as well as the dose and duration of oral vancomycin therapy for Clostridium difficile.

METHODS:A retrospective chart review will be performed. Patients age >18, receiving oral vancomycin therapy at VCUHS from November 1, 2008 to March 31, 2009 will be included. Patient demographics, including age, gender, race, patient location and medical service, Clostridium difficile toxin assay results, endoscopic evidence of pseudomembranous colitis, small bowel obstruction or ileus will be collected. Additional data to be collected includes temperature, albumin, and WBC within the first 24 hours of starting oral vancomycin therapy, dose, duration, route of treatment, whether an infectious disease consult was obtained, the discharge regimen, history of Clostridium difficile documented in the patient chart, and previous failure of metronidazole therapy.

RESULTS:The number and percentage of patients being treated with oral vancomycin who meet the criteria specified in the guidelines, as well as the dose and duration therapy, will be evaluated. Descriptive statistics will be used to analyze the data and results will be presented.

CONCLUSIONS:This project will provide more data on the current use of oral vancomycin for Clostridium difficile infection at VCUHS.

[270p]

DEVELOPMENT OF A POLICY AND PROCEDURES MANUAL IN ACCORDANCE WITH USP FOR NON-STERILE COMPOUNDING IN A COMMUNITY PHARMACY CHAIN C. Ewing;

PURPOSE:Pharmacists have traditionally prepared compounded medications to help meet the needs of patients when commercially available formulations are either not available or inadequate. With the enactment of the Food and Drug Administration (FDA) Modernization Act of 1997, the United States Pharmacopeia (USP) developed standards for non-sterile compounding that are published as an enforceable chapter as USP . This chapter became official in 2000 and pharmacies across the country have been working to update policies to facilitate compliance ever since. Developing a detailed policy and procedures manual is an important step toward closing the gap between standard practice and compliance with USP .

METHODS:A detailed analysis of CVS/pharmacy's current standard of practice for non-sterile compounding will be made and compared against the guidelines of USP . Based upon the standards outlined by USP , as well as the basic workflow procedure unique to CVS/pharmacy, a policy and procedures manual will be written to guide the implementation of USP standards into practice.

RESULTS:The CVS/pharmacy Non-Sterile Compounding Policy and Procedures Manual will be evaluated for integration in pharmacy workflow chain-wide.

CONCLUSIONS:It is anticipated that this project will demonstrate a process for the smooth transition to compliance with USP that can be followed at all CVS/pharmacy locations.

[296p]

DEVELOPMENT OF A SYSTEM TO UPDATE AND MAINTAIN AN INACTIVE INGREDIENTS DATABASE FOR PRODUCTS WITHIN A PHARMACEUTICAL COMPANY A. Ghias;

PURPOSE:Patients and healthcare professionals frequently contact pharmaceutical companies regarding inactive ingredients contained in their products. A patient may have sensitivity to a specific ingredient, disease states in which the inactive ingredient may affect them, or prohibition of certain ingredients for religious reasons. In light of these issues, it is crucial that pharmaceutical companies have this information current and readily available. Currently, researching these types of requests can be labor intensive and inefficient, since some of the information needed to respond may not be stored in a centralized place. Development of a system to update the Inactive Ingredient Database would ensure the ingredient information in products manufactured by Boehringer Ingelheim Pharmaceuticals is easily accessible. This would lead to increased efficiency and improved customer service in responding to these important inquiries.

METHODS:A team responsible for collecting and organizing ingredient-related information was established. To accurately catalog data, a spreadsheet containing ingredient information of interest such as gluten, carbohydrate, and sodium content, was created for each product. This ingredient information will be gathered from appropriate individuals in the company. Frequently asked questions will be incorporated in our current medical information database to be used when responding to incoming inquiries. Once all the ingredient information is collected, the goal is to track ingredients changes and keep the database up-to-date.

RESULTS:Results will be presented at this meeting.

CONCLUSIONS:I anticipate the database will enable the Drug Information Unit staff to easily access current ingredient information for all products marketed by Boehringer Ingelheim Pharmaceuticals, Inc. The database will increase efficiency and improve customer service for the Drug Information Unit when responding to ingredient inquiries.

THE QUALITY OF WARFARIN USE IN VETERANS AFFAIRS NURSING HOMES J. Voisine;

PURPOSE: Approximately 12-15% of nursing home patients are prescribed warfarin for indications such as atrial fibrillation, deep venous thrombosis, and mechanical valve replacement. Anticoagulants are commonly associated with preventable adverse drug events (ADEs) in this patient population. Few studies have specifically focused on the quality of warfarin use in long-term care, but two studies of patients in non-government nursing homes concluded that there is room for improvement in areas such as the proportion of days that the International Normalized Ratio (INR) is in the therapeutic range. We do not know if the same problems exist within Veterans Affairs (VA) long-term care facilities. Therefore, the overall objective of this study is to describe the quality of warfarin prescribing and monitoring in patients at five VA nursing homes.

METHODS: The research design is a historical cohort study. The study will include residents of five VA nursing homes in Pittsburgh, PA; Durham, NC; West Haven, CT; Lake City, FL; and Phoenix, AZ. Patients who received warfarin between January 1, 2008 and June 30, 2008 will be identified. Each patient's medical record will be reviewed, and data pertaining to the quality of warfarin use will be collected. We will also record any risk factors for bleeding. Facility characteristics including type of provider, number of beds, and pharmacist involvement will also be recorded.

RESULTS: Results will be presented

CONCLUSIONS: Warfarin frequently is associated with preventable ADEs in nursing home patients. In order to decrease the risk of adverse events, it is important to maintain the INR within the therapeutic range. Studies outside of the VA have identified this as an area for improvement. If similar problems exist within the VA, then interventions need to be developed to improve the quality of warfarin prescribing and monitoring within VA nursing homes.

A PILOT STUDY OF THE SAFETY AND EFFICACY OF FONDAPARINUX IN THE TREATMENT OF HEPARIN-INDUCED THROMBOCYTOPENIA (FIT-HIT TRIAL) J. Vital;

PURPOSE: Heparin-induced thrombocytopenia (HIT) is a serious adverse drug event (SAE) that may result in death if not treated appropriately. The two FDA approved agents for treatment of HIT, argatroban and lepirudin, are administered as a continuous IV infusion, require frequent monitoring and have complicated dosing and titration regimens. Fondaparinux, a Factor Xa inhibitor, is FDA approved for prophylaxis of deep vein thrombosis (DVT) in patients undergoing surgery for hip replacement, knee replacement, hip fracture or abdominal surgery, treatment of acute pulmonary embolism (PE) and treatment of acute DVT without PE. Despite published reports of its efficacy, fondaparinux is not FDA approved for treatment of HIT. The primary objective of this study is to assess the safety of fondaparinux while the secondary objective is to evaluate the efficacy of fondaparinux in the treatment of HIT.

METHODS: Adult subjects receiving a heparin product with a significant drop in platelet count as defined by study criteria will be eligible for enrollment. Fondaparinux will be administered subcutaneously once daily. The dose will be based on weight according to the manufacturer's product information. Fondaparinux therapy will continue until successful transition to warfarin with an INR of 2-3 for two consecutive days is achieved or until the primary medical team deems necessary. Safety will be determined by major bleeding events defined as a reduction in hemoglobin by 2g/dL or more over a 24 hour period or requiring a transfusion of ≥ 2 units in a 24 hour period. Efficacy will be defined as an increase in platelets by at least 30% of nadir values to $>100,000/\text{mm}^3$ or prevention of new thrombotic events. Follow-up will continue for 28 days following the last dose of fondaparinux for the treatment of HIT.

RESULTS: Data will be collected and summarized by presenting frequency distributions and basic summary statistics.

CONCLUSIONS: It is anticipated that fondaparinux will be a safe and effective agent for the treatment of HIT.

A COMPARISON OF HEALTHCARE PROVIDERS' INQUIRY INTO PATIENT USE OF COMPLEMENTARY/ALTERNATIVE AND OVER-THE-COUNTER MEDICINE USE R. Boyer;

PURPOSE: In national emphasis on improved medication reconciliation, patients' use of non-prescription and complimentary agents continues to be overlooked. Current literature has not fully elucidated the extent to which different healthcare practitioners investigate use of such agents, especially in outpatient settings. The primary objective of this study is to establish the comparative frequency to which physicians and pharmacists ask about CAM/OTC use in an outpatient setting. Secondary objectives include describing comparative practices of collecting CAM/OTC medication histories, describing comparative attitudes toward CAM/OTC use, defining characteristics associated with an increased likelihood of inquiring about CAM/OTC use, and establishing the comparative completeness of actual CAM/OTC use.

METHODS: This single-blind, prospective, observational study will take place in various ambulatory clinics. With the intent of characterizing provider-patient communications regarding CAM/OTC use, the researchers will attend clinics to directly observe, with provider and patient consent, physicians' and pharmacists' regularly scheduled visits. All providers will be blinded as to the nature of the observation. During visits, the researcher will record whether or not the provider inquires about CAM/OTC use and the methods used to obtain this information. After the practitioner has completed the visit, the researcher will obtain patients' medication histories specific to their CAM/OTC use; this medication history will be considered the "actual" patient use. This "actual" patient use will then be compared to the use obtained only through provider inquiry. A sample size of 66 visits per provider group was calculated to find a 20% difference between provider groups with 80% power. The primary objective will be analyzed using a student's t-test.

RESULTS: Anticipated study completion March 2009. Results and conclusions to be presented at the conference.

CONCLUSIONS:

OUTCOMES ANALYSIS OF THE IDENTIFICATION OF METHICILLIN RESISTANT (MRSA) AND METHICILLIN SUSCEPTIBLE (MSSA) S. AUREUS BY PCR M. Grifasi;

PURPOSE: The purpose of this study was to determine the outcomes associated with the rapid identification of Methicillin-Resistant (MRSA) and Methicillin-Sensitive (MSSA) S. aureus by PCR analysis from blood cultures positive for gram-positive cocci.

METHODS: Patients with a blood culture positive for gram-positive cocci between November 1, 2005 and June 30, 2007 were enrolled in this retrospective population based case control study. This study included all adult patients with both nosocomial and community associated S. aureus. Case patients selected were those with PCR detection of S. aureus, and control patients were selected from a computerized data set of all S. aureus bacteremia previously identified by standard culturing and susceptibility testing. The major outcomes of the study were length of stay, time from identification of MRSA/MSSA to treatment, associated mortality, and the difference in the amount of vancomycin utilized. The data was analyzed using appropriate statistical testing.

RESULTS: The outcomes of the difference between MRSA and MSSA bacteremias and identification by standard culturing versus PCR will be recorded and the results will be presented.

CONCLUSIONS: It is anticipated that the results of this study will demonstrate decreased length of stay and decreased associated mortality with MSSA bacteremia compared to MRSA bacteremia. It is also anticipated that time from identification of MRSA/MSSA to treatment will be less with PCR identification versus standard culturing and overall vancomycin utilization will be less in the PCR group.

[345p]

IMPACT OF WARFARIN DOSING PER PHARMACY IN A COMMUNITY, NON-TEACHING HOSPITAL HANG TRUONG, PHARM.D, PGY1 H. Truong;

PURPOSE:Warfarin remains one of the leading causes of medication associated adverse reactions and medication errors due to its intricate pharmacokinetic and pharmacodynamic properties and narrow therapeutic index. The Joint Commission's National (JCAHO) Patient Safety Goal 3E for 2008 required the organization to reduce the risk associated with anticoagulation therapy and stressed the need for standardized protocols to individualize the care provided to each patient. Evidence has shown the benefits of pharmacist-managed warfarin in terms of improving care while minimizing adverse events and reducing cost. Caritas Norwood Hospital, a community, non-teaching hospital initiated a warfarin per pharmacy protocol, which incorporated current clinical guidelines and evidence-based medicine. It was reviewed and approved by the P & T committee in 2007. A consult service was implemented in April 2008 and the protocol was implemented for all inpatients receiving warfarin in December 2008. The purpose of this study is to review the clinical outcomes of warfarin management by clinical pharmacists in reaching the goal of providing safe and effective anticoagulation

METHODS:A retrospective chart review will be performed for data from December 3, 2008 to April 3, 2009 for any patient on warfarin with a goal INR 2-3. The patient population with an INR goal of 2.5-3.5 was excluded from the protocol. Primary outcomes will be time-in and time-to-therapeutic range, % INR therapeutic at discharge, % of INRs above, below, and within the target ranges at day 5

RESULTS:Data collection and analysis are currently in progress. Results will be presented

CONCLUSIONS:To be presented

[362p]

TREATMENT OF CHILDREN WITH STATUS EPILEPTICUS: DEVELOPMENT OF AN EMERGENCY DEPARTMENT ALGORITHM H. Monk;

PURPOSE:Status epilepticus (SE), the most common neurological emergency in childhood, accounts for thousands of emergency department (ED) visits each year. Though associated with significant morbidity and mortality, this condition does not have a consensus guideline for its treatment, which may contribute to delay in drug therapy. Without prompt pharmacologic intervention, patients are more likely to be refractory to treatment, increasing the risk for complications such as multi-organ failure and death. A multidisciplinary team collaborated to develop a treatment algorithm that would terminate seizure activity rapidly, maintain vital functions, and to initiate coma-inducing medication within 30 to 60 minutes of arrival to the ED for those patients considered to be in refractory SE.

METHODS:A literature review of SE treatments for children > 2 months of age to 18 years was completed via Medline and EMBASE for the years 1975 - 2008. Benchmarking of SE drug therapy was completed through pediatric and critical care list-serves. Expert opinions were obtained through referrals. All information was systematically evaluated and an algorithm developed by the Departments of Pharmacy and Neurology. Controversies in the literature were taken to multidisciplinary committees for discussion and resolution. The completed algorithm was reviewed with the Department of Emergency Medicine prior to evaluation and approval by the Drug Use Evaluation and Therapeutic Standards Committees, respectively.

RESULTS:An algorithm for the ED treatment of SE in children ages 2 months and older was finalized and implemented in November 2008. Education was provided to all ED practitioners and the algorithm placed on the hospital intranet.

CONCLUSIONS:The pediatric SE treatment algorithm is currently in use in the ED at CHOP. An evaluation is planned to determine adherence to the algorithm as well as patient disposition and outcomes pre and post implementation.

[353p]

RAPID SEQUENCE INTUBATION IN PATIENTS WITH SEVERE SEPSIS: AN EVALUATION OF SAFETY WITH ETOMIDATE USE B. Stump;

PURPOSE:Etomidate is a general anesthetic agent that is used during rapid sequence intubation (RSI). Etomidate is known to suppress the adrenal response by blocking 11- β hydroxylase; the final step in cortisol production. The importance of a properly functioning adrenal system in severe sepsis has been demonstrated previously. The primary objective of this study is to investigate the impact of etomidate use for RSI on the rate of survival to hospital discharge of mechanically ventilated patients with severe sepsis. Additionally we will evaluate the effect of etomidate use on corticotropin stimulation testing and hydrocortisone therapy. Finally this study will investigate the impact of etomidate on the length and intensity of vasopressor therapy.

METHODS:A retrospective medical record review was conducted at York Hospital. Patients who were admitted to the Medical ICU between January 11, 2008 and January 11, 2009 with the diagnosis of severe sepsis or septic shock and were mechanically ventilated were enrolled in this investigation. Patients were identified by the use of the Project IMPACT® database. Patient survival to hospital discharge was compared based on the administration of etomidate. Appropriate use of steroids and the corticotropin stimulation test was defined based on the 2008 Surviving Sepsis Guidelines. Finally the intensity and length of vasopressor therapy was compared between patients who received and those who did not receive etomidate.

RESULTS:The rates of mortality for RSI patients receiving and not receiving etomidate will be collected, compared and presented. Additionally the influence of etomidate on hydrocortisone use and vasopressor therapy will be identified.

CONCLUSIONS:It is anticipated that the results of this study will help to better define the safety of etomidate use in patients with severe sepsis.

[363p]

IMPROVING THE CHEMOTHERAPY PROCESS TO ENHANCE MEDICATION SAFETY E. Bathalon;

PURPOSE:Objectives: Chemotherapy related medication errors can lead to serious, and sometimes tragic consequences. 1 It is estimated that two thirds of the medication errors that occur in newly diagnosed cancer patients are preventable. 2 The objectives of this process improvement study were to analyze the MRMC chemotherapy process for timeliness and accuracy, to identify areas of improvement, and to assess the improvements made.

METHODS:Methods: A two-phase prospective study was initiated at MRMC's Outpatient Infusion Center (OPIC) and Oncology Care Center. The first phase assessed the current process while the second phase assessed the improved process. Nursing staff at OPIC were required to complete a time and accuracy survey for patients receiving chemotherapy agent(s) needed to be compounded by the MRMC pharmacy. The Oncology Care Center pharmacist completed a time survey and chemotherapy order checklist for each chemotherapy order processed.

RESULTS:Results: During phase one, 92 OPIC data collection forms were collected and 87 (94.6%) were analyzed. The mean (SD) time to transcribe and dispense a chemotherapy order was 70 (33.41) minutes. Chemotherapy regimens with three agents took the longest at 101 (27.37) minutes. The most common missing data on the chemotherapy orders (n= 45) were hold parameters and start date. The time to complete a two pharmacist double check was 13.7 (8.75) minutes. Seven new chemotherapy orders were processed. It took 20 (10.69) minutes to locate a protocol for a new chemotherapy order. Four medication errors occurred during the study period.

CONCLUSIONS:Conclusion: Results and improvements made to the chemotherapy process will be assessed and presented. It is anticipated that this project will reduce chemotherapy related medication errors and reduce the time required to transcribe and dispense chemotherapy agents.

SAFETY AND EFFICACY OF VARENICLINE IN HOSPITALIZED PSYCHIATRIC PATIENTS A. Alipour;

PURPOSE:The primary objective is to identify adverse effects associated with the use of varenicline in hospitalized psychiatric patients. Secondary objectives are to identify patterns which might be useful in predicting varenicline-induced psychiatric adverse effects, establish recommendations for assessment and management of psychiatric adverse effects, and evaluate varenicline's role in therapy for smoking cessation in a psychiatric population.

METHODS:The study will be conducted within State-funded psychiatric facilities and consists of two arms, a retrospective chart review and a prospective qualitative survey. All patients receiving varenicline and a sample of patients receiving NRT between May 2006 and March 2009 will be enrolled, with a target of at least 100. Demographics, adherence, laboratory results, subjective/objective outcomes, and adverse event data will be collected by chart review. Retrospective data for varenicline and NRT groups will be analyzed using the Chi-Square and Student's T-test. Between-group differences in adverse events and efficacy will be described. Approximately, 30 subjects will be recruited into the prospective survey arm and given The Tobacco Craving Questionnaire and Side Effect Checklist. Data from the survey arm will be presented in a descriptive report.

RESULTS:We will compare type, incidence, and patterns of varenicline versus NRT adverse effects in a severely mentally ill population.

CONCLUSIONS:It is anticipated that this project will help to establish the role of varenicline for smoking cessation in the psychiatric population and identify factors which might improve patient safety.

MEASURING THE TIME TO TRANSITION FROM IV TO ORAL ANTICOAGULANTS WITHIN THE INPATIENT HOSPITAL SETTING AFTER IMPLEMENTATION OF A PHARMACIST LEAD ANTICOAGULATION MANAGEMENT PROGRAM. W. Freih;

PURPOSE:To measure the time to transition from IV to Oral anticoagulants within the inpatient hospital setting after implementation of a pharmacist lead anticoagulation management program.

METHODS:This evaluation was a prospective review of all inpatients admitted between August 1st 2008 to January 31st 2009 with an admitting or co-morbid diagnosis of deep vein thrombosis (DVT) or pulmonary embolism (PE) while hospitalized (Cohort Two). The results from Cohort Two were compared to baseline data (i.e., prior to the introduction of the anticoagulation program) obtained from retrospective review of all inpatients admitted between January 1st to June 30th 2008 (Cohort One). Clinical impact was measured by improvement in quality of care, defined as fewer adverse events and faster achievement and maintenance of therapeutic goals. Economic impact was assessed by faster achievement of therapeutic goals, and its indirect impact on length of stay (LOS) and/or reimbursement denials or downgrades

RESULTS:The number of patients, adverse events, time to achieve therapeutic goals, length of stay, and reimbursement denials or downgrades will be recorded, and the results will be presented.

CONCLUSIONS:It is anticipated that this project will demonstrate improvement in clinical and economic outcomes through a pharmacist-led anticoagulation management program.

EVALUATING EFFICACY AND RESOURCE UTILIZATION IN TYPE 2 DIABETES PATIENTS AT A BALTIMORE VETERAN AFFAIRS INSULIN INITIATION CLINIC N. Leon;

PURPOSE:Hayward et al recently evaluated the impact of physicians initiating insulin therapy in type 2 diabetes patients in a primary care setting with patients serving as their own controls. Results of the study showed that A1c decreased by 0.9% at 1 year as compared to stable oral therapy. Clinical pharmacists are in an ideal position to assist in diabetes drug therapy management. Currently there is limited information available in the literature regarding the influence of pharmacist interventions on diabetes control. The primary objective of this study is to evaluate the impact of pharmacist services in an Insulin Initiation Clinic on outcomes of patients with Type 2 diabetes compared to patients receiving usual care in a matched primary care clinic without a pharmacist. The primary objective is the difference in the number of patients attaining an A1c reduction of greater than or equal to 1%. Secondary objectives include an assessment of institutional system resource utilization (with regard to primary care visits, hospitalizations, ER visits, ophthalmology and podiatry visits), the differences in mean change of A1c, and number of patients attaining an A1c of < 7%.

METHODS:This is a controlled, retrospective chart review of approximately 100 patients who participated in the VA insulin initiation clinic from its inception in January 2006 to July 2008 and an equally matched group of Type 2 Diabetes patients who participated in Baltimore VA Primary Care clinic. All Type 2 diabetes mellitus patients who have been to the Baltimore VA insulin initiation clinic or primary care clinic and have had at least 2 visits in 1 year within the study time period will be included in the study. All patients who refused insulin therapy or diabetes management over the period will be excluded.

RESULTS:Results are pending.

CONCLUSIONS:Conclusion pending analysis of results.

DRUG UTILIZATION EVALUATION OF HUMAN RECOMBINANT FACTOR VIIA AT A UNIVERSITY HOSPITAL. A. Brilliant;

PURPOSE:In 2006, the Formulary Committee of Albany Medical Center (AMC) approved prescribing guidelines and a mandatory physician order sheet for the use of recombinant human factor VIIa (rFVIIa) in patients without hemophilia or inherited bleeding disorders. The guidelines and order sheet were intended to support appropriate use of rFVIIa and to control expenditures by preventing inappropriate use. Since implementation of the guidelines, the utilization of rFVIIa has been increasing, generating costs of \$427,000 in 2007 and \$633,000 in 2008. Preliminary evaluation has suggested that a substantial percentage of our use of rFVIIa has not been in accordance with the current guidelines. This study is intended to evaluate the use of rFVIIa at this institution.

METHODS:This study was approved by the AMC Institutional Review Board (IRB). Patients who received rFVIIa from January through September 2008 were identified via the pharmacy computer system. Retrospective chart review is being conducted to collect data on the use of rFVIIa in those patients without hemophilia or an inherited bleeding disorder. Forty-five patients (given 51 doses) are being reviewed for compliance with recommendations and evaluation of outcomes.

RESULTS:All charts have been reviewed. Average dose administered was 6.3 mg, or 71 mcg/kg. Predominant services writing for rFVIIa were Neurosurgery (17), Cardio-Pulmonary Surgery (11), Trauma (6), and Neurology (5). Of these, 49% of doses ordered complied with our current guidelines. Survival rate of patients receiving rFVIIa was 64%, with the majority of patients discharged to rehabilitation (21) and remainder discharged to either home (6), nursing home (1), or hospice (1). Four adverse events (3 cerebrovascular, 1 myocardial infarction) occurred with use of rFVIIa.

CONCLUSIONS:Our analysis suggests the need for revision and update of our current guidelines to align with new literature and clinical practice. Education of proper use and dosage may also be beneficial.

PSEUDOHYPERPHOSPHATEMIA ASSOCIATED WITH THE USE OF LIPOSOMAL AMPHOTERICIN B D. Zlott;

PURPOSE:Hyperphosphatemia is a commonly reported adverse event related to the use of Ambisome® (liposomal amphotericin B). Data has started to emerge suggesting that some of these reports may be due to an interaction between the lipid bilayer of the drug formulation and the equipment used to measure phosphorous concentrations in blood samples from patients. False reports of elevated phosphate levels can result in the initiation of unnecessary treatment, and eventual hypophosphatemia. Determining the interactions involved in this phenomenon may result in more accurate interpretation of elevated phosphate levels in the setting of Ambisome® use.

METHODS:Medical records of patients with elevated phosphate levels who were concurrently receiving Ambisome® therapy were reviewed to determine the contribution of other potential sources of hyperphosphatemia. Additionally, these patients' charts were reviewed for clinical signs or symptoms of hyperphosphatemia. When possible, data regarding the laboratory equipment and techniques used to determine phosphate levels from these patients was gathered for analysis. With support from laboratory personnel, each step of specimen processing was assessed to determine which step was associated with falsely elevated phosphate levels.

RESULTS:The number of patients experiencing hyperphosphatemia while receiving Ambisome® will be recorded, along with other potential factors contributing to the observed hyperphosphatemia. Additionally, laboratory equipment and techniques associated with falsely elevated phosphate levels will be recorded. These results will be presented.

CONCLUSIONS:It is anticipated that the results will show that hyperphosphatemia observed in this set of patients is actually a pseudohyperphosphatemia resulting from a drug-laboratory interaction.

THE EVALUATION OF A FRAUD AND ABUSE DRUG UTILIZATION REVIEW ON COST AND UTILIZATION OF CONTROLLED SUBSTANCE PRESCRIPTIONS IN A MANAGED CARE ORGANIZATION A. Hindman;

PURPOSE:This study will evaluate a drug utilization review on the cost and utilization of controlled substance prescription drugs. The difference in the cost and utilization of these prescription drugs will be compared for each member before they were investigated by a pharmacist and compared 6 months after the investigation. The utilization of these drugs is expected to be reduced over this time period, translating into reduced costs for the Health Plan and its members. The results of this study are important to determine the value and to make improvements to this drug utilization program.

METHODS:We will retrospectively compare cost and utilization of the members 6 months before the drug utilization review is performed to the cost and utilization of the members' pharmacy claim history 6 months after the drug utilization review.

RESULTS:The outcomes that will be compared are the cost of controlled substances, the number of controlled substance prescription fills, the number of unique prescribers of controlled substance prescriptions, and the number of unique pharmacies used to fill controlled substance prescriptions per member per month.

CONCLUSIONS:It is anticipated that this evaluation will show the value and effectiveness of the drug utilization review in reducing member fraud and abuse of prescription drugs.

EVALUATING THE IMPACT OF EDUCATION ON ANTIMICROBIAL DRUG LEVEL MONITORING IN AN INTENSIVE CARE UNIT SETTING. C. Sovereign;

PURPOSE:Antibiotics are commonly prescribed in the intensive care setting. Certain antimicrobial agents require therapeutic drug level monitoring to achieve maximal efficacy and/or avoid toxicity. Monitoring requires correct timing and labeling of each antimicrobial level. Errors in drawing or reporting these levels have the potential to be misinterpreted and may compromise patient safety. The objective is to determine the baseline accuracy of drug level monitoring and to assess the impact of education.

METHODS:This study retrospectively reviewed all aminoglycoside and vancomycin drug levels drawn in the intensive care units at Albany Medical Center for a baseline period of three months. Accuracy of classification, infusion time, and appropriateness of level was assessed and determined based on the hospital's formulary guidelines. Educational lectures are in the process of being presented to the staff of each ICU discussing the errors that occurred and the correct antimicrobial drug level monitoring procedure.

RESULTS:Ninety-five patients received at least one antimicrobial dose and had at least one antimicrobial drug level drawn during this three-month data collection period. From these patients, 270 antimicrobial drug levels were drawn and 114 errors were recorded; 43 timing errors and 71 errors due to level classification. The current education has currently reached 66 ICU staff members.

CONCLUSIONS:Numerous errors can occur during the antimicrobial drug level monitoring process. The most common errors were associated with the classification of these levels and occurred among vancomycin levels. Educational lectures will soon conclude and handouts summarizing the material presented will be given out to all nursing staff. Following the education, data will be gathered prospectively in the intensive care units for three months using the same criteria. The pre-intervention and post-intervention data will be compared, evaluated, and information will be provided to the respective units.

TRANSITION FROM SLIDING-SCALE TO BASAL-BOLUS INSULIN E. Corica;

PURPOSE:There is little evidence that sliding scale insulin protocols offer adequate glycemic control or improve clinical outcomes. Basal-bolus protocols more closely resemble physiologic insulin release in non diabetic patients. The purpose of this study is to determine if rates of hypo/hyperglycemia are reduced after switching to a basal-bolus protocol.

METHODS:This study is being conducted as part of a three year initiative to improve inpatient glycemic control at Maine Medical Center in Portland Maine. The initiative began in 2007 and Fall 2008 will see the implementation of hospital wide basal-bolus insulin protocol. This protocol represents a change from the current sliding scale insulin orders now used in the majority of inpatient units in the hospital. Study will be submitted to the Institutional Review Board for approval. Data will be collected through the hospital's electronic medical system. All data will be recorded without patient identifiers. Data will focus on two cardiac medical units for the period of 6 months prior to protocol implementation through the 6 months post implementation. Patients younger than 18 years old will be excluded. Specific parameters being evaluated are: 1. Length of stay for patients discharged with a diagnosis of diabetes. 2. Percentage of patients with blood glucose levels greater than 180 mg/dL or less than 70 mg/dl 3. Time to reach target blood glucose levels once basal bolus insulin protocol ordered. 4. Time to implementation of protocol for patients identified with out of range glucose.

RESULTS:

CONCLUSIONS:

