than low volume prescribers. Primary care providers were substantially less likely than psychiatrists to prescribe clozapine (OR = 0.55, p<0.01) but just as likely to antipsychotic polypharmacy. **CONCLUSIONS:** Antipsychotic polypharmacy is used as much as clozapine in the care of Medicaid beneficiaries with schizophrenia, but many prescribers only use the former. Clinical and policy initiatives are needed to improve providers' knowledge of clozapine and increase its use while decreasing use of antipsychotic polypharmacy.

PMH72

PREVALENCE AND CORRELATES OF NON-MEDICAL USE OF PRESCRIPTION STIMULANTS AMONG UNIVERSITY STUDENTS

Shanbhag PP, Nayak R

St. John's University, Jamaica, NY, USA

OBJECTIVES: To examine prevalence rates and co-relates of non-medical use of prescription stimulants for attention-deficit-hyperactivity disorder (ADHD) in a university student population with respect to student demographics and academic characteristics. **METHODS:** A cross-sectional research design, utilizing a convenience sampling and self-administered paper and pencil questionnaire technique, was adopted. The survey consisted of a screening tool to measure symptoms of Adult ADHD Self-Report Scale (ASRS-v1.1) in conjunction with items to measure the extent of self-reported prescription drug abuse among students. The use of prescription stimulants was profiled for students representing different schools and academic programs and reasons for the nonmedical use were documented. **RESULTS:** A sample of 638 completed surveys (response rate=98.15%) was obtained with data on unauthorized use of prescription drugs. About 8.62% (N=55) of the sample reported a current and past use of drugs such as Adderall, Ritalin, Dexedrine, Concerta, Cylert at least once. Of these, 76.9% used the drugs non-medically for enhancing academic performance and 23.1% used them for increasing alertness. The illicit drug usage was higher in the age group 18-23 years (87.2%) and was greater for males (64.1%). Overall, students from pharmacy school reported highest abuse (46.2%), followed by law school (20.5%), school of professional studies (12.8%) and business school (10.3%). Generally, undergraduate students reported greater use of prescription stimulants (69.2%) compared to graduate students (30.8%). A majority (66.7%) of the students were also attending professional degree programs. **CONCLUSIONS:** The current campus estimates are mostly in line with the national statistics (4.1% to 10.8%, according to the Center for Lawful Access and Abuse Deterrence, CLAAD, 2013). Misuse and abuse of prescription stimulants among students is a growing problem and largely remains unaddressed. Development of campus educational tools to prevent sharing of prescription drugs and guidelines to recognize early warning signs to curb abuse are necessary.

PMH73

CAN SOCIAL NETWORK ANALYSIS BE USED TO IDENTIFY DOCTOR SHOPPERS?

Perry B[1], Freeman PR[2], Oser CB[3], Martel MM[3], Talbert J[2]

[1]*Indiana University, Bloomington, IN, USA,* [2]*University of Kentucky College of Pharmacy, Lexington, KY, USA,* [3]*University of Kentucky, Lexington, KY, USA*

OBJECTIVES: Doctor shopping is a principle method of obtaining controlled substances (CS) for misuse and is an indicator of escalating drug abuse and fatal overdose. Currently, numerical thresholds are used to identify doctor shoppers, but a lack of consensus on criteria has led to wide variations in estimated rates. The goal of this study was to investigate the feasibility of using social network analysis (SNA) to improve the specification and predictive validity of doctor shopping indicators. **METHODS:** i3 Innovus InVision™ data for the year 2009 was used to identify doctor shoppers using the 4 CS (opioid or benzodiazepine) prescriptions + 4 pharmacies criterion. A network of physicians was created using indirect ties defined by co-prescription to the same doctor shopping patient. A visualization of the clinician network was created to assess clustering, and bivariate analyses were conducted to assess the relationship between physician centrality, or number of ties to other prescribers through a common doctor shopping patient, in the co-prescribing network and average characteristics of a physician's patients. **RESULTS:** A total of 89,297 clinicians prescribed an opioid or benzodiazepine to at least one doctor shopper. The mean degree of centrality was 23.15 (SD 61.48 and ranged from 0-995). Physician degree centrality is positively correlated with patients' average number of pharmacies (r=.28, p<.001), number of prescriptions (r=0.21, p<.001), number of MPEs (r=0.43; p<.001), and number of repeated visits to the same prescriber (r=0.13, p<.001). The network visualization map revealed a large network of 7,288 doctors tied by 45,181 co-prescribing relationships. **CONCLUSIONS:** The results of this study confirm the feasibility of using SNA to identify doctor shoppers. Further studies using two-mode SNA are warranted to improve the specification and predictive validity of doctor shopping indicators and to determine the patient, clinician, and point-of-service characteristics associated with doctor shopping behavior.

PMH74

PREVALENCE OF SELF-REPORTED ADULT ADHD SYMPTOMS AMONG UNIVERSITY STUDENTS: A MULTIDISCIPLINARY COMPARISON

Shanbhag PP, Nayak R

St. John's University, Jamaica, NY, USA

OBJECTIVES: To estimate prevalence of Adult ADHD (AADHD) symptoms among university-based students across multiple academic disciplines. **METHODS:** A cross-sectional research design, utilizing convenience sampling and self-administered paper and pencil questionnaire technique, was adopted. Adult students (>18 years) were recruited from a university campus in New York City area. AADHD Self-Report Scale- v1.1 (ASRS v1.1), a pre-validated screening instrument, was used to assess performance along inattention, hyperactivity/impulsivity and combined symptom sets of adult ADHD. A score of 17 or more on an ASRS v1.1 scale between 0 and 72 indicates the likelihood of ADHD, whereas a score of 24 or more indicates immense likelihood of ADHD. Individual component scores of ASRS were compared for students from six different schools and programs within the university. **RESULTS:** The final sample consisted of 638 students from six different schools representing multiple academic programs. Using ASRS-v1.1 symptom cut-off threshold, a prevalence rate of ADHD symptoms ranging from 21.2% to 66.2% (indicating likelihood and immense likelihood of ADHD respectively) was observed for the general student sample. Only 3.4% of the participants had been previously diagnosed with ADHD. The prevalence of self-reported ADHD symptoms was higher in the age group of 18-23 years (81.3%) and was greater in females (53.1%). A majority of students had the inattentive type of symptomatology (72.72%). With regard to different disciplines, prevalence rates ranged from 49% (pharmacy school) to 5.9% (school of education). More undergraduate students reported AADHD symptoms (70.9%) compared to graduate students (28.4%). Students in healthcare discipline reported greater ADHD symptomatology (54.6%) compared to students in non-healthcare fields. **CONCLUSIONS:** Symptoms of AADHD appear to be more prevalent in student populations than documented evidence would suggest. Among many that are affected, most are either unaware of the condition or undiagnosed. These findings have implications for students' overall health and academic performance.

PMH75

THE CONCENTRATION OF ANTIPSYCHOTIC PRESCRIBING: EVIDENCE FROM MEDICAID

Tang Y[1], Chang CH[1], Huskamp H[2], Gellad WF[1], Donohue JM[1]

[1]*University of Pittsburgh, Pittsburgh, PA, USA,* [2]*Harvard Medical School, Boston, MA, USA*

OBJECTIVES: Given considerable variability in treatment response and medication side effects across individual patients using antipsychotics, customizing treatment to the needs of each individual is key to improving patient outcomes. This study examined the degree to which psychiatrists were diversified vs. concentrated in their choice of antipsychotic medication and identified factors associated with their prescribing. **METHODS:** Using 2011 data from Pennsylvania's Medicaid we identified psychiatrists who regularly prescribed antipsychotics (defined as ≥10 nonelderly patients). Using prescriber ID we linked claims data, from which we obtained information on patient characteristics and psychiatrist prescribing behavior, to demographic information on psychiatrists from the AMA Masterfile, and to information on organizational affiliations from IMS Health's HCOS TM database. We used three measures of antipsychotic prescribing concentration: Herfindahl index (HHI), share of most preferred ingredient, and number of ingredients. We used multiple membership linear mixed models to evaluate the degree of concentration for antipsychotic prescribing. Predictors included patient-, physician-, and organization-level factors. **RESULTS:** The analytic cohort included 764 psychiatrists treating 65,256 patients. Psychiatrists prescribed several ingredients (mean: 9); however, prescribing behavior was relatively concentrated (mean HHI: 2,603; share of most preferred ingredient: 37.8%), with wide variation across psychiatrists (range HHI: 1,088-7,270; share of most preferred ingredient: 16.4%-84.7%; number of ingredients: 2-17). Having a higher share of SSI-eligible patients, patients with serious mental illnesses, non-Hispanic whites, and older patients was associated with less concentrated prescribing although effects were relatively small (all p<.05). Female psychiatrists had more concentrated prescribing than that of their male counterparts (p<.10). Psychiatrists affiliated with behavioral health organizations had more diversified antipsychotic prescribing. **CONCLUSIONS:** Antipsychotic prescribing behavior in a large state Medicaid program was relatively concentrated and varied substantially across psychiatrists. Some psychiatrists treating Medicaid enrollees with antipsychotics may be limited in their ability to tailor treatment to individual patient needs and preferences.

PMH76

IMPACT OF KENTUCKY HOUSE BILL 1 ON CONCURRENT PRESCRIBING OF OPIOID, ALPRAZOLAM, AND CARISOPRODOL

Freeman PR, Troske S, Goodin AJ, Blumenschein K, Talbert J

University of Kentucky College of Pharmacy, Lexington, KY, USA

OBJECTIVES: Kentucky House Bill 1 (HB1) was enacted in July 2012 to address prescription drug abuse and diversion. This legislation included stronger pain clinic regulations, mandatory prescriber registration with Kentucky's prescription drug monitoring program (PDMP) and mandatory use of PDMP data prior to issuing a new controlled substance prescription. The purpose of this study was to assess the impact of HB1 on the concurrent prescribing of three controlled substances: an opioid (hydrocodone or oxycodone), alprazolam, and carisoprodol (OAC). This combination has been identified as a signal for misuse and diversion. **METHODS:** De-identified PDMP data from July 2009 through June 2013 was analyzed to determine the number of patients who concurrently received prescriptions for OAC. Concurrent was defined as receiving prescriptions for each OAC component within 30 days. 12-month OAC totals were compared for each fiscal year (defined in KY as July 1 – June 30). Fiscal years were chosen for analysis based on the date of implementation of legislation (July 2012). Differences in mean number of patients receiving concurrent OAC prescriptions were analyzed using two-tailed t-tests for fiscal years pre and post legislation. **RESULTS:** The number of patients receiving concurrent OAC prescriptions for OAC during the study period were 22,423 (FY2010), 25,465 (FY2011), 22,795 (FY2012), and 15,983 (FY2013). The number of patients receiving concurrent OAC prescriptions was significantly lower (P<0.001) in FY2013 relative to FY2012. **CONCLUSIONS:** Implementation of Kentucky House Bill 1 was associated with a 29.9% decrease in the concurrent prescribing of a combination of CS commonly associated with misuse and diversion. Further studies to differentiate the relative impact of pain clinic regulations from the impact of mandatory registration and use legislation are warranted to determine the effectiveness of these approaches in curbing the abuse and diversion of prescription drugs.

PMH77

PHYSICIAN CARE-PROVIDING BEHAVIOR IN TREATING ATTENTION-DEFICIT HYPERACTIVE CHILDREN AND ADOLESCENTS

Patel A[1], Chen H[1], Aparasu R[1], Ochoa-Perez M[2], Chan W[3], Sherer J[1]

[1]*University of Houston, Houston, TX, USA,* [2]*Legacy Community Health Services, Houston, TX, USA,* [3]*University of Texas Health Science Center, Houston, TX, USA*

OBJECTIVES: This study aims to explore physician care-providing behavior in treating children and adolescents with Attention-deficit/hyperactivity disorder (ADHD). **METHODS:** The study was conducted using the GE electronic medical records (GE-EMR) 1995-2010. The cohort consisted of all children and adolescents (age≤18 years), who were prescribed either stimulants or atomoxetine hydrochloride and had at least two physician visits. Incident ADHD cases, defined as those who have not been diagnosed with ADHD or received ADHD prescription in the last 6 months, were followed for a period of 12 months to observe their physician care-providing behavior. **RESULTS:** Approximately 5% of children in the GE-EMR were diagnosed with ADHD. 74% of the cases were identified by primary care physicians (PCPs), 5% by a mental health specialist, and the remaining cases had missing provider specialties. 52% (N=101,516) of ADHD cases were prescribed pharmacotherapy immediately following the first ADHD diagnosis, while 43% (N=35,069) had delayed prescriptions with median time to treatment of 55 days (IQR: (21-171 days)). ADHD cases first identified by PCPs were more likely to receive immediate pharmacotherapy than those identified by mental health specialists (58% vs 41%, P=<0.0001). The majority of the children who received pharmacotherapy were prescribed stimulants (89%), about 10% were prescribed atomoxetine and less than 1% were on a combination of the two. The most commonly prescribed concurrent non-ADHD medications were antidepressants (11%) and atypical antipsychotics (4.6%). During the one year follow-up, children with ADHD had an average of six office visits with the first follow-up visit at an average of 51 days after treatment initiation. Only 0.39% (N=318) of children received concurrent psychotherapy. **CONCLUSIONS:** As compared to mental health specialists, PCPs are more likely to prescribe pharmacotherapy immediately after the ADHD cases were identified. Medication concurrent psychotherapy is low in patients seen by either PCPs or mental health specialists.

PMH78

USE OF MULTIPLE CONCURRENT ANTIPSYCHOTICS IN CHILDREN ENROLLED IN THE MISSISSIPPI MEDICAID PROGRAM

Shah R[1], Nunna S[1], Banahan III B[1], Hardwick SP[2], Clark JP[2]
[1]*University of Mississippi, University, MS, USA,* [2]*Mississippi Division of Medicaid, Jackson, MS, USA*

OBJECTIVES: Little evidence exists to support the increasing concurrent use of multiple antipsychotics (APs) among children. Case reports suggest that use of multiple APs could lead to an increased risk of delirium, serious behavioral changes, cardiac arrhythmias, and death. In 2013, the National Collaborative for Innovation in Quality Measurement (NCINQ) proposed a quality measure of concurrent use of multiple (2+) APs among children for use in Medicaid and CHIP programs. The Pharmacy Quality Alliance (PQA) has been working on a similar measure using 3+ APs. The objectives were to analyze the performance in the Mississippi Medicaid program on both the 2+ and 3+ proposed quality measures. **METHODS:** A retrospective analysis was conducted using Mississippi Medicaid data for July 2013 through June 2014. For both measures the denominator contained beneficiaries ages 0 to 21 as of June 2014, who were continuously enrolled 3+ months and were on any AP for at least 90 days. The numerators contained those beneficiaries who were concurrently on 2+ APs or 3+ APs for a period of at least 90 days during the measurement year. **RESULTS:** The denominator included 4,435 children who were on at least 1 AP. About 464 (10.5%) and 159 (3.6%) beneficiaries were concurrently on 2+ or 3+ APs respectively. The performance rates on the two measures did not significantly differ for the fee-for-service or two managed care plans. Also, the performance rates on the measures decreased with an increase in beneficiary age. These results also were consistent across the three health plans. **CONCLUSIONS:** There is considerable debate about the rate of appropriate concurrent use of 2+ APs in this population. However, there is no clinical support for concurrent use of 3+ APs. Although the percentage of children concurrently taking 3+ APs is small, possible drug utilization management actions are needed to further reduce this occurrence.

PMH79

TRAJECTORIES OF BUPRENORPHINE TREATMENT AND ASSOCIATED EMERGENCY DEPARTMENT AND INPATIENT USE IN A LARGE MEDICAID PROGRAM

Lo-Ciganic W[1], Gellad WF[2], Gordon AJ[2], Cochran G[2], Donohue JM[2]
[1]*University of Arizona, Tucson, AZ, USA,* [2]*University of Pittsburgh, Pittsburgh, PA, USA*

OBJECTIVES: Buprenorphine is an effective treatment for opioid use disorders. However, uncertainty about optimal duration of buprenorphine treatment may lead to substantial variation in provider decision-making, and patient outcomes. In response to the high cost of treatment, some payers have placed limits on treatment duration although little is known about the impact of these limits. We used group-based trajectory models to identify distinct trajectories of buprenorphine use based on prescription refills, and examined emergency department (ED) and inpatient use associated with these trajectories in a large state Medicaid program. **METHODS:** We analyzed data from a retrospective cohort study of 10,945 adults (18-64 years) Pennsylvania Medicaid enrollees initiating a new episode of buprenorphine treatment between 2007-2011. We used group-based trajectory models to identify trajectories in the 12 months following buprenorphine initiation. Multivariate Cox proportional hazard models were used to examine the association between trajectories and time to first all-cause hospitalization and first emergency department (ED) visit in the following year. **RESULTS:** Six trajectories of buprenorphine treatment were identified: 4 groups discontinued buprenorphine (24.9% discontinued <3 months, 18.7% at 3-5 months, 12.4% at 5-8 months, 13.3% >8 months); 9.5% refilled intermittently; and 21.2% refilled persistently for 12 months. Factors associated with treatment discontinuation were minority race, having history of frequent ED visits and hospitalizations, and comorbid psychoses. After adjusting for sociodemographics, health status, and provider-level covariates, patients who refilled persistently had a 20% lower risk of all-cause hospitalizations (hazard ratio [HR]=0.80, 95% CI, 0.68-0.94) and 15% lower risk of an ED visit (HR=0.85, 95% CI, 0.77-0.94) in the subsequent year, compared to those discontinuing between 3-5 months. **CONCLUSIONS:** Buprenorphine treatment trajectories were highly variable in this large Medicaid cohort. Patients who used buprenorphine persistently for 12 months had lower risk of all-cause hospitalizations and ED visits than those experiencing early discontinuation.

PMH80

PRESCRIPTION PATTERNS FOLLOWING FIRST-LINE SECOND-GENERATION ANTIPSYCHOTICS FOR PATIENTS WITH SCHIZOPHRENIA IN JAPAN: AN INSURANCE CLAIMS DATABASE ANALYSIS

Jamotte A[1], Onishi Y[2], Clay E[1], Aballea S[1]
[1]*Creativ-Ceutical, Paris, France,* [2]*Creativ-Ceutical K.K., Tokyo, Japan*

OBJECTIVES: Clinical guidelines for schizophrenia recommend monotherapy of second-generation antipsychotics (SGAs) for treating patients suffering from schizophrenia, but do not address the issue of how to treat patients with inadequate first-line treatment. The aim of this study is to describe real-word prescription patterns for patients suffering from schizophrenia in Japan. **METHODS:** Using data from the Japan Medical Data Center (JMDC) database, a retrospective longitudinal cohort study was conducted, including adults aged from 18 to 65 years with a first prescription of antipsychotic (index date) between January 2009 and September 2013, and diagnosed with schizophrenia around index date. The treatments prescribed in first and second lines were described and treatment duration was estimated using the Kaplan-Meier method. Proportions of patients receiving an add-on treatment, switching or not treated after discontinuation of first-line treatment were estimated. **RESULTS:** 1,674 patients were included. Mean age of the population was 35.4±11.2 years at index date and 54.5% were females. 82% of these patients received SGA monotherapy as first-line therapy. Among this subgroup, the most frequently prescribed drugs were: olanzapine (27.1%), aripiprazole (27.0%), risperidone (22.1%) and quetiapine (16.3%). 64% of patients reached end of first-line treatment within 6 months, of whom 26.6% had a switch, 11.6% had an augmentation and 61.8% stopped treatment. The median duration of first-line treatment was 3 months. Most frequently prescribed therapies in second line were aripiprazole (23.2%), olanzapine (22.5%), quetiapine (13.7%) and risperidone (9.1%), and 6.3% were antipsychotic combinations. **CONCLUSIONS:** SGA monotherapy was frequently prescribed as first-line treatment, consistently with clinical guidelines. However the duration of first-line therapy is short and the high proportion of patients without treatment may be a cause for concern.

RESEARCH POSTER PRESENTATIONS - SESSION III

DISEASE-SPECIFIC STUDIES
CARDIOVASCULAR DISORDERS – Clinical Outcomes Studies

PCV1

IMPACT OF DIPEPTIDYL PEPTIDASE-4 INHIBITORS ON THE RISK OF CARDIOVACULAR-RELATED HSOPITALIZATIONS

Kathe NJ[1], Shah AB[2], Said Q[1]
[1]*University of Arkansas for Medical Sciences, Little Rock, AR, USA,* [2]*University of Arkansas for Medical Sciences, LITTLE ROCK, AR, USA*

OBJECTIVES: To examine the risk of hospitalization due to cardiovascular events associated with the use of dipeptidyl peptidase-4 (DPP-4) inhibitors, compared to other anti-diabetic agents, among diabetic patients. **METHODS:** Patients age >18 years and taking diabetes medication were identified in the IMS Lifelink Plus® database for the years 2006-2013. Cardiovascular events were defined as inpatient discharge diagnosis of heart failure, stroke and coronary heart disease occurring at least 30 days after initiation of therapy. Patients were continuously enrolled for 6 months prior and 24 months post the date of first antidiabetic prescription ('index-date'). Patients with cardiovascular event in 6-month pre-index period were excluded. Patients were followed for 24 months post index-date. Patients with at-least 30 days of DPP-4 inhibitors as their starting therapy were identified as DPP-4 inhibitors users, while patients with at-least 30 days of any other anti-diabetic therapy and no DPP-4 inhibitors in the 24-month follow-up period were identified as other anti-diabetic users. Unadjusted and adjusted logistic regression models were employed to estimate the risk of cardiovascular-related hospitalizations for those on DPP-4 inhibitors, compared with those on other antidiabetic agents. The model was adjusted for demographics, comorbidities, and region of residence. **RESULTS:** The final sample consisted of 45,767 patients with mean age of 50.71 years and 55.15 % females. Of these, 1973 patients had DPP-4 inhibitors while 43,794 had other anti-diabetic therapy. At baseline 2.43% patients had hypertension, 36.06% had dyslipidemia and 28.63% had valve disorder. Patients taking DPP-4 inhibitors had an increased risk for having a cardiovascular event as compared with those on other anti-diabetic agents (unadjusted odds ratio:1.524, 95% confidence interval [CI]:1.131-2.056; adjusted odds ratio: 1.331, 95% CI: 0.985-1.799). **CONCLUSIONS:** DPP4 inhibitors may increase the risk of cardiovascular events as compared to other anti-diabetic agents, which warrants close monitoring of diabetic patients on DPP-4 inhibitors.

PCV2

A STUDY OF ADVERSE DRUG REACTIONS ASSOCIATED WITH ANTIHYPERTENSIVE AGENTS IN A TERTIARY CARE TEACHING HOSPITAL IN CENTRAL NEPAL

Paudel S, Subedi N
College of Medical Sciences-Teaching Hospital, Chitwan, Nepal

OBJECTIVES: To examine the incidence of different types of adverse drug reactions(ADR) in a group of drug treated hypertensive patients. **METHODS:** This is a cross sectional study conducted in collaboration with Department of Internal Medicine, College of Medical Sciences and Teaching Hospital, Bharatpur, Chitwan during the period of three months (1st July to 30th September 2014). The patients attending the outpatient department of Cardiology and under antihypertensive drugs therapy were taken as sample. **RESULTS:** Among the total 100 patients studied, the mean age was 58.56 ± 12.83 years. Males contributed to 59 and females 41