pression with versus without sleep difficulties was associated with lower utility scores (b = -0.04, p < 0.001), greater work impairment (rate ratio = 1.4, p < 0.001), activity impairment (rate ratio = 1.30, p < 0.001), and more healthcare provider visits (rate ratio = 1.31, p < 0.001). CONCLUSIONS: Sleep difficulties, when combined with depression, are associated with lower quality of life and greater work productivity loss and health resource use than either sleep difficulties or depression alone, or neither. Greater attention to sleep problems in depression may lead to better outcomes.

PMH56
COMPARISON OF DIFFERENT COMORBIDITY MEASURES FOR PREDICTING PHYSICAL AND MENTAL HEALTH IN DEMENTIA
Chutim A, Bowinkw D, Dwibedi N, Mehta S, Kambel P, Johnson ML
University of Houston, Houston, TX, USA
OBJECTIVES: Comorbidity risk adjustment methods are increasingly used to reduce errors in healthcare reimbursement in epidemiological research. We sought to compare the performances of four comorbidity measures in predicting physical and mental health among patients with dementia. METHODS: Nationally representative data from the 2000-2003 Medical Expenditure Panel Survey (MEPS) were used. The Elixhauser and the Charlson/D’Hoore methods were based on the International Classification of Disease, 9th Revision, Clinical Modification (ICD-9-CM) codes whereas the Chronic Disease Score (CDS)-1 and the CDS-2 were based on prescription medications. The performances were compared using the R² obtained from linear regression models. The outcomes of interest were scores on the Medical Outcomes Short Form-12 (SF-12) Physical Component Scale (PCS) and Mental Component Scale (MCS). RESULTS: In linear regression models controlling for age and gender the CDS-2 performed the best (R² = 0.242 for PCS, R² = 0.157 for MCS) followed by the Elixhauser (R² = 0.170 for PCS, R² = 0.107 for MCS), the Charlson/D’Hoore (R² = 0.160 for PCS, R² = 0.038 for MCS) and the CDS-1 (R² = 0.154 for PCS, R² = 0.025 for MCS). Combining the ICD-9-CM based (Elixhauser) measure with the medication based (CDS-I) measure improved the R² for both PCS (R² = 0.357) and MCS (R² = 0.250). CONCLUSIONS: Although CDS-2 compared with medication method outperforms Elixhauser, Charlson/D’Hoore and CDS-I methods in predicting physical and mental health in dementia patients studied. Best performance, however, was observed in the model that combined diagnoses based (Elixhauser) measure with the medication based (CDS-I) measure.

PMH59
ASSOCIATION BETWEEN WORK PRODUCTIVITY AND SEVERITY OF DEPRESSION AMONG FULL-TIME EMPLOYEES AS MEASURED BY THE WPAI & HPQ
Jain G1, Roy A1, Hanirshkian V2, Yu S1, Dabbous DH1
1Eli Lilly, LLC, Palm Harbor, FL, USA, 2Takeda Pharmaceuticals International Inc., Deerfield, IL, USA
OBJECTIVES: This study examined the burden of depression on employees using measures of work productivity. METHODS: Individuals (n=18 years of age) employed full-time with diagnosed depression completed a Web-based computer-generated 25-minute survey in February 2010 (study population identified by Harris Interactive®). The survey used the Patient Health Questionnaire (PHQ-9) to assess depressive symptoms, and the Health and Work Performance Questionnaire (HPQ) and Work Productivity and Activity Impairment (WPAI) questionnaires to assess depression and presenteeism. Higher scores represent more work missed on the HPQ (hours monthly) and WPAI (%) weekly) absences scales. Higher scores on the HPQ presenteeism scale (measure of actual performance to possible performance) and on all WPAI absenteeism scales (lower scores on the WPAI presenteeism scale) were seen in higher levels of depression severity. RESULTS: A total of 1051 full-time employees were evaluated (58% female, mean age 47 yrs). PHQ-9 scores indicated 423 (40.25%) employees with no depression symptoms, 319 (30.35%) with mild, 166 (15.79%) with moderate, 82 (7.80%) with moderately severe, and 61 (5.80%) with severe depression. All levels of depression were associated with decreased work productivity. Both the HPQ (presenteeism [b=1.04, 73.54, 68.61, 66.10, 61.48, no depression, mild, moderate, moderately severe, and severe depression groups, respectively; p < 0.0001) and WPAI (absenteeism [0.92, 3.04, 4.55, 7.43, 14.00] and presenteeism [10.67, 26.17, 38.81, 44.68, 54.31]; p < 0.0001) showed progressive worsening in work productivity with increasing severity of depression. Pearson’s coefficient of correlation for WPAI with PHQ-9 was 0.3158 for absenteeism and 0.238 for presenteeism respectively, p < 0.0001. CONCLUSIONS: Depression has a significant impact on work productivity as measured by the WPAI and HPQ. Presenteeism and absenteeism worsened with increasing depression severity, and decreased overall productivity. This was seen across all levels of depression severity.

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PMH58
NEW DISEASE MANAGEMENT PROGRAM FOR OPIOID DEPENDENT PATIENTS DECREASES DRUG USE AND INCREASES 12 STEP MEETING ATTENDANCE: ONE YEAR RESULTS OF A RANDOMIZED CLINICAL TRIAL
Tkacz J, Ruetsch C
Health Analytics, LLC, Columbia, MD, USA
OBJECTIVES: Buprenorphine-medication assisted treatment (B-MAT) is clinically effective for opioid dependence (OD). Ancillary treatment services, however, may be needed to maximize treatment efficacy. The purpose of the present study was to investigate the one year effect of a disease management program on treatment outcomes among a national sample of OD patients. METHODS: Opioid dependent patients new to B-MAT (N = 1,426) were randomized to receive either B-MAT plus a patient support program (intervention group, n = 987) or B-MAT alone (standard care group, n = 439). The intervention was a confidential, outbound, telephonic support program designed to provide new B-MAT patients encouragement and helpful suggestions for the initial B-MAT treatment. Once enrolled in the study, all patients completed the Addiction Severity Index (ASI) and Treatment Services Review (TSR) at various time points over one year. The ASI is a semi-structured interview designed to measure problem severity in seven functional areas: work, alcohol, and drug use, legal, health care, family, and social support. RESULTS: Logistic regression analyses controlling for baseline problem severity and demographics revealed that intervention group subjects were significantly less likely to receive opioids at month 12 (p < 0.05; exp (b) = 0.71), and were significantly more likely to attend 12 step/self-help group meetings for substance abuse (p < 0.05; exp (b) = 1.50) compared to the standard care group. CONCLUSIONS: Randomization to the disease management program resulted in a decrease in the reported use of opioids and an increase in self-help group counseling attendance. Supplementing B-MAT with a structured disease management program seems to be an effective way to improve patient outcomes. Current results replicate, and extend to B-MAT, findings from other studies of the effect of telephonic intervention programs on patient outcomes.

PMH59
DIFFERENCES IN BASELINE PROBLEM SEVERITY BETWEEN PRESCRIPTION AND STREET OPIOID ABUSERS AMELIORATED AFTER PARTICIPATION IN DISEASE MANAGEMENT PROGRAM: RESULTS AT ONE YEAR
Tkacz J, Ruetsch C
Health Analytics, LLC, Columbia, MD, USA
OBJECTIVES: Opioid dependence (OD) results from the continued abuse of opioids, which includes prescribed medication for pain (e.g., hydrocodone, oxycodone) and “street” opioids including heroin and methadone. Although patients receive the same diagnostic guidelines regardless of their opioid of abuse, prescription and “street” users represent two different patient populations, each with their own unique co-morbidities and psychosocial profiles. The purpose of this study was to compare the effectiveness of a new disease management program (DMP) among the various types of OD patients. METHODS: A national sample of OD patients new to buprenorphine-medication assisted treatment assisted (B-MAT) were enrolled in the study. The DMP was a confidential, outbound, telephonic support program designed to provide new B-MAT patients encouragement and help them resolve problems inherent to early B-MAT treatment. All patients completed the Addiction Severity Index every six months and every time point from the course of the year to assess substance abuse changes. The TSR assess utilization of a variety of health, social, legal, employment, and family support services. The DMP was designed to help patients achieve an inpatient detoxification of a variety of health, social, legal, employment, and family support services. The DMP was designed to help patients achieve an inpatient detoxification of

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PMH61 NATIONAL ESTIMATES AND CHARACTERISTICS OF AMBULATORY CARE VISITS FOR DEMENTIA CARE IN THE UNITED STATES, 1998–2007

OBJECTIVES: As data is limited, to determine national estimates and characteristics of dementia visits to Medicare, non-Medicare, and public insurance payers and need further study.

RESULTS: Of an estimated 6.5 million adult ambulatory care visits (5 visits per 1000 people) for AD, SD, 52%, 25%, 14%, and 11%, mentioned an antidepressant (most commonly fluoxetine), antipsychotic (most commonly risperidone), and antianxiety (most commonly lorazepam) respectively. Patients with AD or SD were predominantly 75-84 year olds (53%), white (89%), female (63%), living in metropolitan statistical area (81%), South (30%) and Northeast (28%), on Medicare (73%), seeing a freestanding private practice physician (61%) or a neurologist (32%), established patient (88%), and reported hypertension (12%). In multivariable logistic regression we analyzed the characteristics associated with anti-dementia drug mention at AD or SD visits. RESULTS: Of an estimated 6.5 million adult ambulatory care visits (5 visits per 1000 people) for AD or SD, 52%, 25%, 14%, and 11%, mentioned an antidepressant (most commonly fluoxetine), antipsychotic (most commonly risperidone), and antianxiety (most commonly lorazepam) respectively. Patients with AD or SD were predominantly 75-84 year olds (53%), white (89%), female (63%), living in metropolitan statistical area (81%), South (30%) and Northeast (28%), on Medicare (73%), seeing a freestanding private practice physician (61%) or a neurologist (32%), established patient (88%), and reported hypertension (12%). In multivariable logistic regression we analyzed the characteristics associated with anti-dementia drug mention at AD or SD visits. RESULTS: Of an estimated 6.5 million adult ambulatory care visits (5 visits per 1000 people) for AD or SD, 52%, 25%, 14%, and 11%, mentioned an antidepressant (most commonly fluoxetine), antipsychotic (most commonly risperidone), and antianxiety (most commonly lorazepam) respectively. Patients with AD or SD were predominantly 75-84 year olds (53%), white (89%), female (63%), living in metropolitan statistical area (81%), South (30%) and Northeast (28%), on Medicare (73%), seeing a freestanding private practice physician (61%) or a neurologist (32%), established patient (88%), and reported hypertension (12%).

CONCLUSIONS: This ongoing study provides multivariantal perspectives on the high burden experienced by caregivers of individuals with AD and SD-in every-day clinical practice settings. Study funded by AstraZeneca; Clinical Trials Registry. NCT01062607.

PMH62 TREND IN UTILIZATION OF AND SPENDING ON BENZODIAZEPINES IN THE UNITED STATES MEDICAID PROGRAM: 1991-2009

OBJECTIVES: As data is limited, to determine national estimates and characteristics of dementia visits to Medicare, non-Medicare, and public insurance payers and need further study.

RESULTS: Of an estimated 6.5 million adult ambulatory care visits (5 visits per 1000 people) for AD or SD, 52%, 25%, 14%, and 11%, mentioned an antidepressant (most commonly fluoxetine), antipsychotic (most commonly risperidone), and antianxiety (most commonly lorazepam) respectively. Patients with AD or SD were predominantly 75-84 year olds (53%), white (89%), female (63%), living in metropolitan statistical area (81%), South (30%) and Northeast (28%), on Medicare (73%), seeing a freestanding private practice physician (61%) or a neurologist (32%), established patient (88%), and reported hypertension (12%). In multivariable logistic regression we analyzed the characteristics associated with anti-dementia drug mention at AD or SD visits. RESULTS: Of an estimated 6.5 million adult ambulatory care visits (5 visits per 1000 people) for AD or SD, 52%, 25%, 14%, and 11%, mentioned an antidepressant (most commonly fluoxetine), antipsychotic (most commonly risperidone), and antianxiety (most commonly lorazepam) respectively. Patients with AD or SD were predominantly 75-84 year olds (53%), white (89%), female (63%), living in metropolitan statistical area (81%), South (30%) and Northeast (28%), on Medicare (73%), seeing a freestanding private practice physician (61%) or a neurologist (32%), established patient (88%), and reported hypertension (12%).

CONCLUSIONS: This ongoing study provides multivariantal perspectives on the high burden experienced by caregivers of individuals with AD and SD-in every-day clinical practice settings. Study funded by AstraZeneca; Clinical Trials Registry. NCT01062607.

PMH64 COMPARISON OF THE RISPERIDONE EQUIVALENT DOSES FOR THE 9 MOST FREQUENT TYPICAL AND ATYPICAL ANTIPSYCHOTICS IN PATIENTS DIAGNOSED WITH SCHIZOPHRENIA BASED ON PRODUCT LABELS WITH ACTUAL DOSAGES PRESCRIBED IN A LARGE NATIONAL DATABASE

OBJECTIVES: Physicians often make dosage decisions based on experience and knowledge in addition to the product label. This makes it difficult for economists to compare the “real world” costs and benefits of alternative therapeutic choices. We compare a published methodology for calculating therapeutic dose equivalence based on approved labeling for various antipsychotics prescribed for schizophrenia with actual prescription data in that population. METHODS: The sample consisted of a proportional selection of patients that derived from a population of patients of all ages, across all payers, and in all regions of the United States. The information included NDC code sets, quantity and day of supply, and was aggregated from pharmaceutical prescriptions files. The frequency distribution measured the top antipsychotics in prescription volume and is compared to schizophrenia. The therapeutic dose equivalence was determined using the methodology of Woods (2003) as the comparator. RESULTS: A total of 324,724 patients with a diagnosis of schizophrenia were included in the study. Doses equivalent to 1 mg/day of Risperidone were 86.17 mg/day of Quetiapine, 5.09 mg/day of Olanzapine, 5.25 mg/day of Antipiprazole, 92.28 mg/day of Clozapine, and 33.74 mg/day of Ziprasidone. CONCLUSIONS: With the ever-increasing array of differentially-dosed medications available, it is imperative for physicians and outcomes researchers to utilize a method of therapeutic dose equivalence to translate actual prescription data into therapeutic patterns so that informed decisions can be made evaluating the cost and cost-effectiveness of various therapeutic choices. Our study enables pharmaco-economic comparisons among antipsychotics not only according to label-approved dosages, but also real-world dosing patterns.

PMH65 EFFECT OF PRESCRIPTION MONITORING PROGRAMS (PMPs) ON OPIOID OVERDOSE ADMISSION

OBJECTIVES: Over the past three decades the concept of prescription monitoring programs (PMPs) has developed immensely, however little evidence regarding their effectiveness has been collected. This study focuses on simple difference-in-difference evaluations, comparing the implementation effect of a PMP in Tennessee with Kentucky, which has a well-established PMP, and Missouri, which has not to date developed a PMP. The effect of interest is opioid overdose hospital admission. METHODS: The present study examines a simple difference-in-difference model of a natural experiment caused by the staggered implementation of prescription monitoring programs in Kentucky, Missouri, and Tennessee. We implement a pre-post design with the primary outcome of interest being hospital admission due to opioid overdose. For this evaluation we used all claims from Kentucky, Missouri, and Tennessee in the HCUP-NIS data from 2006 and 2008. The data is separated according to whether the hospital admission was due to opioid overdose. Four models are examined: main effects, individual fixed effects, and the full model, which takes into account both year and state fixed effects and shows the true effect of the Tennessee implementation. Although the findings in the Tennessee models trend positively, there are no significant findings in the full model. RESULTS: We look at various models, including fixed effects for state and year and a full model, but no consistent trends in the data and statistically significant findings, coefficients do trend in expected directions suggesting a sound model. CONCLUSIONS: There are multiple possible reasons for the lack of significant findings, including several study limitations. Despite the limitations, it can be said that the Controlled Substance Abuse Database Program in Tennessee has no risk of suicidal behavior in children and young adults remains controversial. We aimed to quantify the tradeoffs of alternative strategies in treating pediatric major depressive disorder (MDD) with respect to clinical benefit and risk of fatal and non-fatal suicidal behavior over a five-year time horizon. METHODS: We developed a discrete-time hazard model integrating epidemiological and clinical data from the published literature in order to simulate the effect of three treatment strategies (i.e., selective serotonin reuptake inhibitors (SSRIs), cognitive behavioral therapy (CBT), and a combination of SSRIs and CBT) on a U.S. population of children and young adults with major depressive disorder. We considered the implications of different scenario beyond the time horizon of existing data and of uncertain assumptions about suicide attempt risks and patients’ response to treatment. Main outcome measures were symptom-free weeks, suicide attempts, and suicide deaths. RESULTS: In a cohort of 1,000,000 simulated children and young adults, there were more than twice as many suicide deaths among those started on SSRIs (129), compared to those started on CBT (50) or combination treatment (621) over the first 36 weeks of treatment. Over a five-year time horizon, this hierarchy of suicide risk persisted, even under assumptions most favorable to SSRIs. With respect to symptom-free weeks, combination treatment was superior to both SSRIs and CBT alone, but this difference was marginal beyond the five-year time horizon. CONCLUSIONS: Considering the risk-benefit profile over a five-year period, CBT appears to offer a safer profile with respect to suicide deaths and attempts than combination treatment or SSRIs alone. While combination treatment maximizes symptom-free weeks, the additional benefit over the five-year time horizon is modest and must be weighed against the clinically meaningful increase in fatal suicides.