

episode initiation. The date of first mania-related visit after depression was the index date of manic-switching for cases and a random date was assigned for controls. Based on the pharmacy records, 2050 patients were established having treatment of antidepressant monotherapy, mood stabilizer monotherapy, or antidepressant-mood stabilizer combination therapy within 30 days prior to the index date. A logistic regression with difference-in-difference approach was employed to predict the probabilities of having manic-switching by different types of treatment. **RESULTS:** Patients with antidepressant monotherapy and antidepressant-mood stabilizer combination therapy were 31% ($n = 87$) and 29% ($n = 82$) in the case group and 43% ($n = 768$) and 27% ($n = 481$) in the control group. Using logistic regression to adjust for patient demographics, clinical-related and health-related variables, the odds ratios for having manic-switching in relation to antidepressant monotherapy and antidepressant-mood stabilizer combination therapy were 2.71 (95% CI: 1.32–5.56; $p < 0.01$) and 1.51 (95% CI: 0.81–2.81; $p = 0.20$) respectively, compared to mood stabilizer monotherapy. **CONCLUSIONS:** This study further validates the national practice guidelines for bipolar disorder with a case-control study design, which does not have the study limitations of typical intent-to-treat approach. Similar results were identified, indicating a risk of induced manic-switching by antidepressant monotherapy yet not by antidepressant-mood stabilizer combination therapy with second-generation antidepressants.

PMH15

STUDY GAPS IN ECONOMIC EVALUATIONS OF PHARMACOTHERAPY IN BIPOLAR DISORDER

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OBJECTIVES: Newer atypical antipsychotic medications were recently approved by the FDA for treatment of bipolar disorder. Although cost-effective pharmacotherapy can significantly lower total medical utilization and costs, economic evaluation studies of pharmacotherapy in bipolar disorder are limited, particularly for atypical antipsychotics. This report reviews and identifies gaps in the current literature regarding impact of pharmacotherapy on health care utilization and costs among bipolar patients. **METHODS:** A literature search was conducted using Medline, CINAHL, International Pharmaceutical Abstracts and Cochrane Collaborative databases for studies published between January, 1990 and November, 2004. Abstracts presented at American Psychiatric Association, National Institute of Mental Health, and International Society of Pharmacoeconomics and Outcomes Research were also examined. Articles were reviewed to determine relevance to health care cost and utilization outcomes associated with bipolar disorder pharmacotherapy. **RESULTS:** The systematic search identified two randomized controlled trials, two studies using administrative claims databases, two studies using retrospective chart reviews and one study using decision-modeling. Two studies reported that atypical antipsychotic olanzapine reduced hospitalizations as compared to placebo and typical antipsychotics. There were no studies comparing outcomes between different atypical antipsychotics for bipolar disorder. Studies evaluating multiple endpoints between first-line pharmacotherapy and combinations of adjunct pharmacotherapy were also lacking. Divalproex exhibited better cost and utilization outcomes as compared to other pharmacotherapies (olanzapine, lithium and carbamazepine). Reduction in total direct costs of bipolar disorder with use of any pharmacotherapy was mostly attributable to reduced hospital stay. **CONCLUSIONS:** It is difficult to compare utilization and cost outcomes between pharmacotherapies due to the lack of head-

to-head studies, differences in research design and population characteristics, and lack of cost-effectiveness studies determining relative value of each pharmacotherapy for bipolar disorder. Comprehensive evaluations of the impact of therapy on differentiated economic endpoints relevant to practice policies (drug costs, outpatient costs, hospitalizations, emergency room visits) are needed.

PMH16

MEASURING THE EFFECT OF A POLICY CHANGE IN MONTHLY PRESCRIPTION LIMIT ON HEALTH CARE UTILIZATION AND EXPENDITURE: A CONTROLLED COMPARISON OF OLS AND PANEL ESTIMATION

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OBJECTIVES: To evaluate the effect of the July, 2001 prescription limit policy change in the South Carolina Medicaid program on the utilization of health care services and their related costs for adult Medicaid recipients diagnosed with schizophrenia or bipolar disorder. **METHODS:** A retrospective cohort study design, identifying subjects with schizophrenia and bipolar disorder compared their utilization of health care services and associated costs 18-months before and after the policy change (July, 2001). Eligible patients were age 21 or older, had a qualifying diagnosis on a hospital or ambulatory claim, and a prescription medication for their diagnosis within 90 days (+/-) of their 1998 or 1999 enrollment date. Total health care cost and service utilization were estimated by ordinary least squares regression models and the results contrasted with panel regression methods due to the short time series. Predictor variables were demographics, inpatient hospitalization, and comorbidities. **RESULTS:** OLS and panel estimation show an increase in total cost and the number of ambulatory, hospital, prescription, and nursing home claims after the policy change. Panel estimation shows a positive monthly trend in the post period for all claims. **CONCLUSIONS:** The policy change resulting in an increase in average monthly patient prescription cost is associated with increases in total cost of care and overall health care utilizations.

PMH17

COMPARING PROPENSITY SCORE AND DIFFERENCE-IN-DIFFERENCE METHODS: SECOND-GENERATION ANTIDEPRESSANT USE FOR BIPOLAR DISORDER

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OBJECTIVES: When conducting analysis using observational data, there is often selection bias for which we must account for in order to adjust for pre-treatment differences between groups in baseline characteristics. This study compared the ordinary regression, propensity score weighting, propensity score matching, and difference-in-difference (DD) methods while addressing the impact of second-generation antidepressant use in adult patients with bipolar disorder. **METHODS:** A logit model was developed, as an ordinary approach, to predict the probability of having post-index mania-related visits from treatment types, controlling for individual demographics, clinical-related variables, health-related variables, and pre-index mania-related visits, serving as the baseline disease severity of bipolar disorder. The propensity score method added more bipolar severity variables to predict the propensity to be with one treatment type, without the problem of over-parameterization in the outcome model. Both weighting and greedy matching approaches were applied after the first-stage propensity score model achieved the covariates balancing. For DD model, a logistic regression was

employed to predict the probability of having mania-related visits in pre-index or post-index period from treatments and time fixed-effect, controlling for other covariates. **RESULTS:** The ordinary regression indicated a protective effect on mania-related visits from antidepressant monotherapy compared to mood stabilizer monotherapy (OR = 0.66, 95% CI: 0.49–0.90), without good control of baseline disease severity. Both propensity score weighting and matching generated statistically indifferent outcomes between treatment types. The results of the DD model identified a significant odds-ratio of 2.40 (95% CI: 1.52–3.79), suggesting an adverse outcome of increased mania-related visits with antidepressant monotherapy compared to mood stabilizer monotherapy. **CONCLUSIONS:** Ordinary regression, propensity score, and DD methods can produce inconsistent outcomes when background characteristics are quite different and/or not all potential confounders can be correctly measured and fully controlled in the model. DD model may be considered in outcome studies when pre-and-post data structure is available.

PMH18**AN EXPLORATORY STUDY TO DEVELOP A MODEL OF QUALITY OF LIFE FOR BIPOLAR DISORDER**

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OBJECTIVES: To derive a patient-based model of quality of life (QoL) for bipolar disorder (BPD). **METHODS:** Qualitative research methods were employed to investigate the impact of BPD on QoL. Specifically, to identify how patients perceive their condition to affect their life quality and how they define “QoL”. Semi-structured interviews were conducted with women with a clinical diagnosis of BPD. Interpretive phenomenological analysis (IPA) was used to explore and interpret participants’ perceptions of QoL impact. IPA involves two stages: a case-by-case thematic analysis, and an interpretive analysis to connect and cluster themes. For the latter, emphasis was placed on interpreting the meaning and importance ascribed by patients to the impact of BPD. The data were then compared to existing models of QoL to derive a QoL model for BPD. **RESULTS:** As IPA requires small sample sizes, interviews were conducted with four women (26–92 (mean 49.5) years). Psychometric tests were employed to ensure that the women were not currently depressed (BDI) or manic (SCAN, MRS). Analysis revealed that BPD has a profound impact on affected individuals. Thematic analysis identified key areas of impact including; social life, personal relationships, self-esteem, work life, fear of rejection and impact on day-to-day activities. Interpretive analysis revealed eight key thematic clusters including; intimate personal relationships, social impact and personal development/fulfillment. Relating these to existing models of QoL suggested that a needs-based model of QoL impact was the most appropriate for BPD. The model suggested that areas of need adversely affected by BPD related to; safety and security, belongingness and love needs; esteem; cognitive needs and self-fulfillment. **CONCLUSION:** BPD impacts many life areas. Application of IPA revealed that the needs-based model of QoL can successfully be used to explain the patient’s perception of, and response to, the symptomatic and functional impact of the condition.

PMH19**TREATMENT ADHERENCE WITH ANTIPSYCHOTICS AMONG BIPOLAR AND MANIC PATIENTS**

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OBJECTIVE: To assess treatment adherence to antipsychotic monotherapy in bipolar/manic disorder. **METHODS:** A total of 18,158 antipsychotic monotherapy treatment episodes for bipolar and manic disorders were identified from a claims database (1999–2003) representing 50 million US insured. Adherence measures included treatment compliance, captured by regularity of prescription refills, and treatment duration. Atypicals included risperidone, olanzapine, quetiapine, and ziprasidone; conventional agents included haloperidol, perphenazine, thioridazine, and thiothixene. Multiple regression adjusted for patient characteristics. **RESULTS:** Quetiapine alone had significantly ($P < 0.05$) greater compliance than the conventional agents and had the highest compliance among the atypicals, which was significantly greater than for risperidone or olanzapine. Olanzapine and ziprasidone demonstrated significantly greater compliance than risperidone. Daily dose was negatively associated with compliance for all agents except quetiapine ($P < 0.05$ for risperidone and the conventional agents), which had a positive, but non-significant association ($P = 0.074$). Quetiapine and risperidone had significantly longer treatment duration than olanzapine, ziprasidone, and the conventional agents. All atypicals, except ziprasidone, had significantly lower odds of switching to another psychotropic compared with conventional agents; quetiapine had the lowest estimated odds ratio. **CONCLUSION:** According to claims data, treatment adherence for quetiapine appears higher than for other agents commonly prescribed for bipolar/manic disorder, possibly due to more favorable tolerability.

MENTAL HEALTH—Depression**PMH20****PATTERNS OF DEMENTIA/ALZHEIMER MANAGEMENT AMONG ELDERLY PATIENTS IN US AMBULATORY CARE**

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OBJECTIVE: To assess patterns of dementia/Alzheimer disease (AD) management and to investigate predictive factors of cognitive-enhancing agents (CEA) use. **METHODS:** A cross-sectional study was conducted using 2000–2002 National Medical Care Survey among elderly patients over the age of 60. Dementia/AD status was defined according to dementia-related ICD-9 codes; additionally, patient visit characteristics and CEA prescriptions associated with dementia/AD status were evaluated using a logistic regression model. **RESULTS:** A total of 25,561 patient visit records were identified. Majority of the visits were from white patients (90.2%) and approximately half of them were made by male individuals (45.9%). Of the total visits, only 0.6% (155) had dementia/AD status. Most of the dementia/AD visits were made by women (60.0%) and persons over the age of 75 (67.7%). Dementia/AD visit records were predominantly from white patients (93.5%) and were associated with public insurance (74.8%; Medicare/Medicaid). Of the dementia/AD visits, about half (46.5%) were prescribed with one or more CEA and donepezil HCl was the most prevalent agent that was prescribed (31.6%). Our logistic regression model evaluating predictive factors of CEA prescription revealed that physician’s specialty was a strong predictor in the model; as psychiatrists (OR = 5.5; $p < 0.01$) and neurologists (OR = 2.6; $p < 0.03$) were more likely to prescribe CEA as compared to other physicians. No other visit characteristics showed significant association with CEA use. **CONCLUSION:** Early detection and treatment of dementia delays the progression of cognitive impairment. Considering the high prevalence of dementia/AD among the elderly (8–10%) in the US, the study’s results show that dementia man-