rates, remission rates and discontinuation rates due to adverse events were extracted and compared in a Bayesian meta-analysis. **RESULTS:** Three aripiprazole, 2 quetiapine and five olanzapine trials were identified together reporting on 2979 patients. Aripiprazole augmentation showed numerically higher efficacy rates compared to quetiapine and olanzapine. Response odds ratios (95%CI) compared to quetiapine and olanzapine were 1.34(0.82–2.06) and 1.52(1.00–2.19) respectively. Remission odds ratios compared to quetiapine and olanzapine were 1.3(0.78–2.07) and 1.26(0.77–1.92) respectively. Aripiprazole augmentation showed numerically lower discontinuation rates due to adverse events compared to quetiapine and olanzapine (OR = 0.99(0.24–2.62) and 0.77(0.23–1.89)). **CONCLUSIONS:** Amongst augmentation treatments with atypical antipsychotics in MDD, aripiprazole shows a tendency towards higher efficacy rates and lower discontinuation rates due to adverse events compared to quetiapine and olanzapine. More direct head-to-head trials are needed to assess the comparative efficacy and safety of adjunctive antipsychotics in MDD.

PMH17

OUTCOME TRAJECTORIES IN THE LONG-TERM TREATMENT OF SCHIZOPHRENIA

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OBJECTIVES: This study aimed to determine distinct subgroups of schizophrenia patients based on their illness severity at baseline and characterize those who were most improved and those who worsened the most. **METHODS:** We used data from a large 3-year prospective, multi-site, observational non-interventional study of individuals treated for schizophrenia in the United States (US-SCAP). A hierarchical cluster analysis was performed to group the patients, using baseline clinical, functional, and resource utilization measures. Improvement of outcome was determined based on the distance from the defined "worst baseline cluster" for each post-baseline measure. A trajectory analysis was used to group patients by improvement of outcome over the 3-year study. **RESULTS:** Almost all participants (99% or 872/880) with 3-year data were found in a single outcomes trajectory, characterized by minimal changes from baseline cluster over the 3-year study period. Approximately one-fourth of individuals moved to a better outcome cluster while about 17% moved to a worse outcome cluster at each year. Only 4% of patients moved from the worst/next to worst cluster to the best/next to best cluster and 16.6% moved from the best/next to best cluster to the worst/next to worst cluster. Most improved patients were more likely than all other patients to have case management, to live in a supervised housing arrangement, and get assistance with securing social services and benefits. **CONCLUSIONS:** The long-term outcome trajectory for almost all schizophrenia patients in this 3-year naturalistic observational study was stable, devoid of change from the baseline cluster. Only a very small subgroup of patients experienced marked improvements, and they were more likely to be engaged in psychosocial rehabilitation. Although current findings may affirm the value of psychosocial rehabilitation, results highlight the need to improve the relatively stagnant long-term illness trajectory of almost all chronically ill patients with schizophrenia.

PMH18

TREATMENT PATTERNS IN ATTENTION-DEFICIT/HYPERACTIVITY DISORDER; ANALYSES WITH THE RAMQ DATABASE

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OBJECTIVES: Approved treatments for attention-deficit/hyperactivity disorder (ADHD) in Canada comprise short-acting (SA) and long-acting (LA) stimulants and a LA nonstimulant medication. The objective of this study was to elucidate different drug treatment patterns to treat ADHD in Canada. **METHODS:** A retrospective prescription claims analysis of a random sample of 15,838 ADHD patients from the Quebec provincial health plan (RAMQ) database was conducted. Any patient with ≥1 physician claim with an ADHD diagnosis and a claim for a treatment approved for ADHD from July 2004 to June 2009 was considered. **RESULTS:** The mean age of the study sample was 14.0 years (SD = 8); 72.6% of the sample were males. There were a total of 416,646 ADHD prescriptions during the 5-year study period. As a proportion of total prescriptions, use of SA medications declined from 72.83% in 2004 to 26.38% in 2009, while use of stimulant and nonstimulant LA medications increased from 27.17% to 73.62% over the same period. Approximately half of the patients used both SA and LA medications either concomitantly or subsequently while approximately 30% used only SA and 19% used only LA. Among those patients who used both types of formulations, switching from SA to LA was the most frequent (27.9%) treatment pattern. A greater proportion of patients (6.4%) on LA methylphenidates required augmentation with SA medications when compared with those on LA amphetamines (1.9%; $p < 0.01$). **CONCLUSIONS:** Results of this RAMQ database analysis illustrate that over time, patients shifted from the use of SA stimulants to formulations that provide all-day coverage. Switching from SA to LA medications and augmentation of LA medications with SA medication are common treatment patterns observed in the management of ADHD with implications for patient care and the efficient use of health care resources. Supported by funding from Shire Development Inc.

PMH19

COMPARATIVE ANALYSIS OF THE EFFICACY AND SAFETY OF ESCITALOPRAM WITH SERTRALINE AND VENLAFAXINE IN THE TREATMENT OF MAJOR DEPRESSIVE DISORDER (MDD)

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OBJECTIVES: The purpose of the review was to evaluate the efficacy and safety of escitalopram compared with sertraline and venlafaxine in treatment of major depressive disorder (MDD). **METHODS:** The analysis was performed in accordance with the rules of systematic review, based on Cochrane Collaboration guidelines and recommendations of Health Technology Assessment Agency in Poland (AOTM). **RESULTS:** In this report there were two subanalyses conducted, evaluating the efficacy and safety of escitalopram in comparison with sertraline and venlafaxine, both consisted of two multicenter, parallel-group, double-blinded, randomized clinical trials. In both comparisons efficacy was evaluated, based on the mean changes in MADRS, HAM-D, CGI-S, CES-D, HAM-A and CGI-I grading scales, as well as safety analysis was performed. Period of eight weeks treatment with escitalopram and sertraline as well as venlafaxine resulted in decrease in number of MDD symptoms and quality of life improvement. Over 50% decrease in number of major depression symptoms in MADRS and HAM-D grading scales compared to baseline indicates high clinical relevance of obtained results, even though statistical significance was not reached. Safety analysis showed similar safety profiles of all drugs taken into account. There were no statistical differences between populations in any of primary endpoints, except for withdrawals from the study due to adverse events in comparison of escitalopram vs venlafaxine favoring escitalopram. **CONCLUSIONS:** Escitalopram seems to be equally efficient and safe drug as sertraline and venlafaxine in treatment of patients with MDD. The clinical-effectiveness analysis ascertained equivalence of efficacy and similarity of safety profile of escitalopram in comparison with sertraline and venlafaxine in therapy of patients with MDD.

PMH20

USE OF A LINKED HOSPITAL ADMISSIONS AND HEALTH CARE CLAIMS DATABASE IN PHARMACEUTICAL OUTCOMES RESEARCH: RESULTS OF A FEASIBILITY STUDY EXAMINING TREATMENT OF SCHIZOPHRENIA WITH ATYPICAL ANTIPSYCHOTICS

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OBJECTIVES: In pharmaceutical outcomes research using health care claims databases, periods during which patients are hospitalized have constituted "black holes", as these databases do not contain any information on pharmacotherapy received in hospital. While admission-level databases provide such information, they lack information on pharmacotherapy received outside of hospital. Recently, it has become possible to link these two types of databases. In this study, we explored their potential value to outcomes research, focusing attention on second-generation antipsychotic (SGA) treatment before, during, and after hospitalization for schizophrenia. **METHODS:** Using a linked inpatient/outpatient database, we identified all adults with ≥1 admissions for schizophrenia between January 1, 2001 and September 30, 2008. Focusing on each patient's first admission, we compiled all health care claims during the 6-month periods preceding and following hospitalization. As our interest was in the use of SGAs, our scope was limited to patients with evidence of receipt of oral ziprasidone, aripiprazole, or quetiapine ("study agents") immediately preceding hospital discharge. We then examined receipt of these agents during the 6-month periods preceding hospitalization and following hospital discharge based on outpatient pharmacy claims; receipt of study agents in hospital was examined using admission-level data. Adherence with study agents following hospital discharge was assessed using proportion of days covered (PDC); patients were deemed nonadherent if PDC fell below 80%. **RESULTS:** A total of 43 patients were identified who met all study entry criteria. Twenty-four patients (56%) had evidence of receipt of a study agent in the period preceding hospitalization. While all patients had evidence of receipt of study agents following hospital discharge, only 12% were adherent at 6 months. **CONCLUSIONS:** Linked inpatient/outpatient databases are a promising avenue for future pharmaceutical outcomes research, as they may greatly expand understanding of the complete chronology of pharmacotherapy–and associated outcomes–for many disease conditions.

PMH21

PREVALENCE AND PREDICTORS OF ANTICHOLINERGIC MEDICATION USE IN ELDERLY NURSING HOME RESIDENTS WITH DEMENTIA

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OBJECTIVES: To examine prevalence and predictors of anticholinergic medication use in elderly nursing home residents with dementia. **METHODS:** The study evaluated anticholinergic medication use in elderly (>= 65 years) nursing home residents using the 2004 National Nursing Home Survey (NNHS). Anticholinergic Drug Scale was used to classify medications as Level 1, Level 2 or Level 3 in order of their increasing anticholinergic activity. Descriptive weighted analysis was used to determine the prevalence of anticholinergic medication use in elderly dementia patients. Multinomial logistic regression within the conceptual framework of Andersen Behavioral Model (ABM) was used to examine the predictors associated with each level of anticholinergic medication use as well as concurrent use of anticholinergic medications belonging to two or more levels. **RESULTS:** According to the NNHS, 0.51 million (95% CI-0.49–0.53) or 73.62% (72.23–75.00) of the elderly patients with dementia used anticho-

linergic medications. The highest prevalence was seen for Level 1 medications (52.37%) followed by Level 2 (3.02%) and Level 3 (2.31%) medications. The prevalence of concurrent use of anticholinergic medications of various levels was 8.42% (7.53–9.32). Multinomial regression analysis revealed that predisposing (age) and need (behavioral symptoms, activities of daily living, out of bed mobility and depression) factors were positively associated with Level 1 drug use. Need factors (behavioral symptoms and total number of medications taken) were found to be negatively associated with Level 2 drug use whereas need factors like parkinsonism and depression were positively associated with receiving Level 3 medications and concurrent use, respectively. **CONCLUSIONS:** Nearly three of four elderly nursing home residents with dementia received anticholinergic medications of different levels. The findings suggest that there is a need to optimize anticholinergic medications in dementia patients, especially the higher level agents due to their significant adverse profile in dementia patients.

PMH22

THE IMPACT OF OUTPATIENT MENTAL HEALTH SERVICES ON RE-ARRESTS AMONG GROUPS OF INDIVIDUALS WITH A SERIOUS MENTAL ILLNESS IN TWO URBAN COUNTIES, ONE IN FLORIDA AND ONE IN TEXAS

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OBJECTIVES: Individuals with a serious mental illness (SMI) often experience recidivistic patterns in the criminal justice system (CJS). It has been argued that the provision of mental health services can disrupt this pattern. We examined the impact of community based mental health services on the arrest patterns of adults with a SMI who became involved in the CJS in Pinellas County Florida and Harris County Texas. **METHODS:** We identified adults 18–64 years old in Florida and Texas with a SMI who spent at least one day in jail during an index year. Statewide and local administrative data sets were used to document their patterns of arrests and utilization of health and mental health services over 3–4 year periods. Generalized estimating equations were used for count data to estimate the association of outpatient and ER/inpatient mental health contacts in a quarter and arrests in the subsequent quarter. Individual fixed effects models were also estimated to account for unobserved time invariant factors correlated with treatment and the likelihood of arrest. **RESULTS:** We identified 3769 and 8505 individuals in the Florida and Texas data sets respectively. In Florida, individuals receiving outpatient services in a quarter were 20% less likely to be arrested in the subsequent quarter. The effect was greater for misdemeanor than for felony arrests. Individuals receiving ER/inpatient services were 7% more likely to be arrested in the subsequent quarter, and 13% more likely to have a felony arrest. The association between outpatient mental health services and arrests was confirmed by the individual fixed effects model. Parallel analyses are underway using Texas data to determine if the relationships hold for different jurisdictions and time frames. **CONCLUSIONS:** Outpatient mental health services were associated with a decrease in the risk of arrests among groups of individuals with a SMI and criminal justice involvements.

PMH23

DEMOGRAPHIC AND CLINICAL PREDICTORS OF HIGH-DOSE PRESCRIPTION OF DULOXETINE IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

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OBJECTIVES: Optimal treatment of major depressive disorder (MDD) includes the selection of an adequate antidepressant medication and its delivery at a fully therapeutic dose for adequate treatment duration. Many factors may influence a physician's decision making with respect to antidepressant choice and appropriate dose level. This study examined the pretreatment predictors of high-dose prescription of duloxetine for MDD patients in the real world clinical setting. **METHODS:** In a large commercial managed-care claims database, 6,132 MDD patients, who were initiated on duloxetine between July 1, 2005 and June 30, 2006, had no prior prescription of duloxetine for 6 months, and had continuous enrollment for both 12 months prior to and post initiation, were included. The associations between demographics and pre-initiation clinical variables and the maximum prescribed duloxetine dose (high: > 60 mg/day; mid: 60 mg/day) were examined by chi-square tests and logistic regression. **RESULTS:** Of the sample, 16.3% had a maximum prescribed duloxetine dose of less than 60 mg/day; 59.3%, 60 mg/day; and 24.4%, >60 mg/day. Compared with mid-dose patients, high-dose patients were older; had more comorbidities of neuropathic pain, osteoarthritis, fibromyalgia, drug dependence, and bipolar disorders; were more likely to be treated by psychiatrists; used more benzodiazepines, venlafaxine, atypical antipsychotics, psychostimulants, and anticonvulsants; and had higher pharmacy and medical costs in the prior 1 year (All p values < .05). After adjustment for health plan type and geographic region of residence, the following factors were independently associated with high-dose prescription: older age (36–64 vs. 18–35 years, OR = 1.34–1.53), neuropathic pain (OR = 1.56), prior use of psychostimulants (OR = 1.32), benzodiazepines (OR = 1.22), venlafaxine (OR = 1.24), atypical antipsychotics (OR = 1.35), and physician specialty (psychiatrist vs. non-psychiatrist, OR = 1.54). **CONCLUSIONS:** Multiple demographic and clinical characteristics and prior costs are associated with a high-dose duloxetine prescription. High-dose treated patients may represent a group of complicated patients with high medical costs who need intensive treatment.

PMH24

ASSOCIATION OF ANTIDEPRESSANT THERAPY AND BIPOLAR DISORDER (BD)-RELATED RE-HOSPITALIZATIONS AMONG PATIENTS WITH MANIC OR MIXED BD EPISODES

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OBJECTIVES: Bipolar disorder (BD) treatment guidelines state that antidepressants (ADs) may precipitate, or exacerbate manic or mixed episodes and generally recommend tapering or discontinuing ADs for patients with recent acute manic or mixed episodes. This study assessed the association between continued AD use and BD-related re-hospitalizations among BD patients. **METHODS:** Using the PharMetrics Patient-Centric Database from January 1, 2004–June 30, 2007, we identified adults with an acute psychiatric event ("index event"), defined by hospitalizations, emergency room visits, or physician visits with a prescription for a new BD medication with a primary diagnosis of BD I mania or BD I mixed. All patients were required to be eligible for the 12 months before and after index event and have a BD-related hospitalization (any diagnosis of any BD subtype) in the pre-index period. Patients with schizophrenia at any time during the study period were excluded. Continued AD use was defined using prescription drug claims as 30+ days of available AD therapy within 120 days after the index event. Logistic regression—controlling for age, sex, geographic region, baseline comorbidities—was used to determine the association between continued AD use and post-index BD-related re-hospitalizations (any diagnosis of any BD subtype). **RESULTS:** A total of 2126 patients met study criteria (mean age, 44; 57% female). 433 BD patients (20.4%) were re-hospitalized within 1 year. Patients receiving continued AD therapy (31.5%) were significantly more likely to be re-hospitalized (OR, 1.387; 95% CI, 1.102, 1.748) than those without continued use. Other predictors of increased risk of re-hospitalization included being female and baseline diagnoses of comorbid substance abuse and eating disorders. **CONCLUSIONS:** Continued AD use in manic or mixed BD may be inappropriate. In this study, AD use for 30+ days within 120 days after an acute episode was associated with greater risk of BD-related re-hospitalization.

PMH25

ASSESSMENT OF HOSPITALIZATION RISK AMONG PATIENTS WITH BIPOLAR I DISORDER TREATED WITH ANTIPSYCHOTIC THERAPY IN A COMMERCIALLY INSURED POPULATION

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OBJECTIVES: To evaluate risk and predictors of hospitalization among commercially insured patients with bipolar I disorder. **METHODS:** Retrospective cohort analysis using the PharMetrics Patient-centric Database, including patients with ≥1 inpatient or ≥2 outpatient medical claims indicating bipolar I disorder and ≥1 prescription for an antipsychotic medication between 7/1/2005, and 3/31/2007. Patients were followed 1 year from date of first (index) antipsychotic prescription. Continuous health benefit eligibility from 1 year before (baseline) through 1 year after (follow-up) index was required. Patients had to receive ≥1 additional antipsychotic claim during follow-up to ensure a treated population. Adherence was measured using medication possession ratio (number of outpatient-treated days divided by total number of outpatient days during follow-up). Multivariate logistic regressions were used to identify factors associated with all-cause (AC) and psychiatric-related (PR) hospitalization. **RESULTS:** A total of 12,100 patients were eligible. Mean (±SD) patient age was 37.2 (±15.7) years, 59.9% were female; 22.8% had baseline diagnoses of substance abuse, and 49.8% had other psychiatric conditions. During follow-up, 27.9% of patients had AC and 25.3% had PR hospitalizations. On average (±SD), patients had 0.5 (±1.1) AC and 0.4 (±1.0) PR hospitalizations. Baseline substance abuse or diagnosis of other psychosis; use of antidepressants, anxiolytics, or anticholinergics; psychiatric hospitalization; and nonadherence to antipsychotic therapy during follow-up were associated with significantly greater risk ($P < 0.05$) of AC and PR hospitalizations; age < 35 years was also associated with significantly greater risk of PR hospitalization. Baseline anticonvulsant use was associated with significantly lower risk of PR hospitalization. **CONCLUSIONS:** Several patient characteristics appeared to be associated with greater risk of hospitalization among commercially insured bipolar I patients receiving antipsychotics. These findings may be useful to health plan administrators interested in targeted interventions, though further research on the impact of such interventions is needed. Supported by funding from Ortho-McNeil Janssen Scientific Affairs, LLC.

PMH26

A COMPARISON OF TRANSITIONS BETWEEN HEALTH STATES AND INSTITUTIONALIZATION AMONG ALZHEIMER'S DISEASE PATIENTS VERSUS NON-ALZHEIMER'S DISEASE DEMENTIA PATIENTS USING THE NACC-UDS DATABASE

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OBJECTIVES: Compare transitions between mild, moderate and severe health states, and to death or institutionalization for Alzheimer disease (AD) and non-AD dementia patients. **METHODS:** The National Alzheimer Coordinating Center's Uniform Data Set (NACC-UDS) is a large, longitudinal dataset funded by the National Institute of Aging that includes AD and non-AD dementia patients, and non-demented controls.