room visits (ER), hospitalizations (HOS) using medical claims data, and prescription costs (Rx) using pharmacy claims data. Analysis of covariance was used to determine differences in health care use and expenditures, adjusting for age, gender, and number of co-morbidities. RESULTS: There were 13,796 participants in the analysis. Baseline characteristics (age, gender, and number of co-morbidities) were comparable in the two groups after matching. Eighty percent of migraine participants identified were female. Analyses involving the complete models showed that migraineurs incurred significantly higher expenditure than non-migraineurs. After adjusting for age, sex and number of co-morbidities, migraineurs had significantly more ER visits per year (0.7 vs. 0.2, p < 0.0001). Annual ER, HOS, and Total expenditures were significantly higher in the Migraine cohort (ER: $480 vs. $125, p < 0.0001 and HOS: $980 vs. $388, p < 0.00001 and Total: $4233 vs. $2004, p < 0.0001). CONCLUSION: Migraine patients utilize more health care resources and incur higher health care expenditures. Study findings highlight the benefits to be realized by managing individuals with migraine.

NEUROLOGICAL DISORDERS—Patient-Reported Outcomes

**PND24**

**IMPACT OF NON-ADHERENCE TO ANTI-EPILEPTIC DRUGS ON MORBIDITY**


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OBJECTIVE: Medication non-adherence among patients with chronic conditions can have both clinical and economic consequences. The objective is to investigate whether non-adherence to antiepileptic drugs (AEDs) is associated with increased morbidity relative to adherence, as proxied by health care utilization and costs, in a Medicaid population with epilepsy. METHODS: A retrospective open-cohort design using state Medicaid claims data from Florida, Iowa and New Jersey in the period of January 1997–June 2006 was employed. Patients aged ≥18 with ≥1 diagnosis of epilepsy, ≥1 neurologist visit, ≥2 AED dispensings, and ≥6 months of baseline period were included. Medication possession ratio (MPR) was used to evaluate AED adherence on a quarterly basis with MPR ≥0.8 considered adherent and <0.8 non-adherent. The association of non-adherence with health care utilization was assessed using univariate and multivariate Poisson regressions to model frequency of hospitalizations, inpatient days, emergency room (ER), and outpatient visits per person-year of observation. Quarterly per-patient inpatient, outpatient, ER, and pharmacy costs were calculated across non-adherent and adherent quarters for the under-65 population and cost differences computed. Adjusted incremental costs of non-adherence were estimated with multivariate Tobit regression models. RESULTS: A total of 33,658 patients met the study inclusion criteria (28,470 under-65), together contributing 388,564 (74%) adherent and 136,550 (26%) non-adherent quarters. Non-adherence was associated with significantly higher incidence of hospitalizations (incidence rate ratio [IRR] = 1.39, 95% confidence interval [CI] = 1.37–1.41), inpatient days (IRR = 1.76, 95% CI = 1.75–1.78), and ER visits (IRR = 1.19, 95% CI = 1.18–1.21). Non-adherence was associated with positive quarterly incremental costs related to serious outcomes, including inpatient ($4320, 95% CI = $4077–$4564) and ER ($303, 95% CI = $273–$334) services. CONCLUSION: Non-adherence to AEDs is relatively common and appears to be associated with increased morbidity as represented by higher health care utilization and costs.

**PND25**

**EXPLORING THE RELATIONSHIP BETWEEN DIFFERENT DISPENSING SYSTEMS AND MEDICATION COMPLIANCE AND PERSEVENCY IN MULTIPLE SCLEORSIS PATIENTS USING PHARMACY CLAIMS DATA**

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OBJECTIVE: Our study explores the relationship between 30-day and 90-day pharmacy dispensing systems and patient medication compliance, persistence, and financial incentive. METHODS: Retrospective pharmacy claims data of multiple sclerosis (MS) patients using four different medications were extracted from a pharmacy database. Patients were followed one year. Compliance was measured using the medication possession ratio (MPR), calculated using the ISPOR method. Anniversary method and Kaplan-Meier survival curves were applied to describe patients’ persistence. Associations with drop-off and different systems were assessed using Cox regression model. Wilcoxon-Mann-Whitney test was used to compare the mean patient out-of-pocket and payers’ costs for two systems. RESULTS: Study sample consisted of 29,808 eligible MS patients predominantly female (77.01%), mean age of 48.4 years. Therapy-specific MPRs on the 30-day and the 90-day system, respectively, were 89.39% and 93.77% with a hazard ratio (HR) for drop-off of 1.657 for Interferon beta-1a (Avonex), 82.72% vs. 88.92% (HR = 1.486) for Interferon beta-1b, 81.48% vs. 88.21% (HR = 1.480) for glatiramer acetate and 87.46% vs. 90.73% (HR = 1.606) for Interferon beta-1a (Rebif). Overall MPR comparison between 30-day and 90-day was 85.55% vs. 90.79% (HR = 1.557). Cost per dose for patients out-of-pocket and payers for a 30-day supply was $70.78 and $1402.10, respectively. In contrast, a 90-day supply was $30.59 and $1404.70, respectively. Significance tests showed the comparison was statistically significant at level 0.05, except comparison between payer’s costs with a p-value of 0.46. CONCLUSION: MS patients using 90-day have higher MPR than patients using 30-day. The patients using 30-day are more likely to drop off, with a 55.7% higher risk of discontinuation. Results suggest that providing a 90-day supply improves MS patients’ compliance and persistence within the one-year study period. Patients spend less when using 90-day system. Future study focuses on pharmacoeconomic impact of the dispensing system, incorporating outcome variables for MS patients’ quality of life.

**PND26**

**COMPARISON OF COMPLIANCE AND PERSISTENCE WITH IMMUNOMODULATING AGENTS FOR MULTIPLE SCLEROSIS IN A COMMERCIALLY INSURED POPULATION**

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OBJECTIVE: To examine compliance rates, measured with the medication possession ratio (MPR) and 12-month persistence rates of patients initiating 1 of 4 immunomodulating treatments for multiple sclerosis (MS). METHODS: The study population consisted of patients aged 18–64 years initiating MS treatment from January 2, 2004, to July 5, 2005. Patients were identified from an administrative claims database (PharMetrics, Inc.,