in health care consumed for the treatment of multiple sclerosis (MS) in patients enrolled in managed care (commercial) and publicly (Medicaid) funded health insurance programs. METHODS: In a retrospective analysis, integrated medical and pharmacy claims data were analyzed to select patients with a diagnosis of MS (ICD-9 code 340) during 2012 calendar year. The presence of comorbidities was also determined using ICD-9 codes present on medical claims. Prescription drug use was evaluated by pharmacy claims and drug-specific billing codes. RESULTS: 19,984 patients with MS were identified, 18,269 from commercial payers and 1,715 from Medicaid. Patients in the Medicaid group were younger (44.4 vs. 48.8 years) and female (81.5% vs. 76.6%) compared to Commercial group, respectively. Although total annual costs related to the care of MS for the groups reflected a modest difference ($33,107 commercial, $33,344 Medicaid), costs associated with specific service categories varied greatly. Pharmacy costs were considerably less in the Medicaid group; however, inpatient and emergency room costs were as much as 5 times higher. The lower pharmacy costs in the Medicaid group are related to lower use of disease modifying treatments (DMT), overall use of DMTs in the Medicaid group was seen in 32.5% of patients, while in the commercial patient group was 52.1%. Multivariate regression will be performed to examine the differences in cost and utilization adjusting for differences in baseline characteristics. CONCLUSIONS: This study will investigate the cost and resource utilization among patients with multiple sclerosis (MS) from medical and pharmacy claims data were analyzed inpatients with a diagnosis of MS (ICD-9 340) during 2012. There were 2 cohorts, those treated with DMT and those not treated, (Non-DMT) for the entire 12 months by the presence or absence of relevant NDC and HCPIC codes. RESULTS: 10,876 patients comprised the DMT cohort compared to 25,431 in the Non-DMT cohort. The two study groups were similar in terms of age, gender and diagnosis. When comparing HRU, significant differences were found in the DMT vs. Non-DMT treated groups. The unadjusted analysis showed that there was a 39.2% reduction in ER visits (55.6/100 vs. 24.25/100), a 35.9% reduction in MS related hospitalizations (46.6/100 vs. 76.6/100) and a 15.5% reduction in hospitalization length of stay (5.14 vs. 6.09), respectively. The average cost per patient for the DMT treated group was $61,698.16 ($33,983.87 due to DMT cost) compared to the total average cost for the Non-DMT group was $25,431. The two study groups differ significantly in terms of costs ($36,119, $30,277, and $25,886) and indirect costs ($23,194, $16,872, and $13,568) decreased substantially with higher adherence (POC-40%, 40% to 79%, and 79% to 120%, respectively). Higher adherence was also associated with lower all cause and MS-related inpatient admissions and emergency visits. Similar trends were observed at 12 months. This study shows adherence to disease modifying therapies is associated with lower non-DMT medical and indirect costs and decreased health care resource use for MS patients.

**NEUROLOGICAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies**

**PND34**

**EFFECT OF IMPROVING ADHESION TO DISEASE-MODIFYING AGENTS ON HEALTH CARE RESOURCE UTILIZATION AND MEDICAL COSTS IN PATIENTS WITH MULTIPLE SCLEROSIS**

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OBJECTIVES: Prior studies have compared multiple sclerosis (MS) patients who are adherent to disease-modifying drug (DMD) therapy with those who are not, but have not analyzed the effect of varying levels of adherence on patient outcomes. This study characterized the benefits and costs offsets of increasing adherence to DMDS. Health care costs and resource use were assessed for patients with different adherence levels at various follow-up periods following DMD initiation. METHODS: A Natural Language Information Retrieval (NLIR) was conducted using OptumHealth Reporting and Insights employer claims database on MS patients (≥2 diagnoses of ICD-9-CM 340.xx) initiating DMD therapy in 2002 through Q1 2012. Direct medical costs (reimbursements to providers), indirect costs (paid to employees), and adherence were evaluated as the proportion of days covered (PDC) declined from 82% at 6 months to 67% at 3 months following initiation (medication possession ratio of 79% over the observation period). 42% of patients had discontinued DMD therapy; 22%, 31%, and 47% of patients had PDC<40%, 40% to 79%, and ≥80%, respectively. Non-DMT direct costs ($36,119, $30,277, and $25,886) and indirect costs ($23,194, $16,872, and $13,568) decreased substantially with higher adherence (PDC-40%, 40% to 79%, and ≥80% at 12, 24, and 36 months, respectively). Higher adherence was also associated with lower all cause and MS-related inpatient admissions and emergency visits. Similar trends were observed at 12 months. This study shows adherence to disease modifying therapy is associated with lower non-DMT medical and indirect costs and decreased health care resource use for MS patients.

**PND35**

**ADHERENCE OF MULTIPLE SCLEROSIS PATIENTS TO DISEASE MODIFYING TREATMENT AND ITS IMPACT ON QUALITY OF LIFE**

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OBJECTIVES: Disease-modifying therapies (DMT) play an important part in the treatment of Multiple Sclerosis (MS). Non-Adherence to DMT affects therapy success and thereby disturbs Health Related Quality of Life (HRQoL). This study investigates patient adherence to approved DMTs for MS among geographically and culturally diverse patient populations and their impact on health related quality of life.

METHODS: The study was an observational, multinational post marketing study. In the six months prior to (baseline) and up to 36 months following observation period initiation. Adherence, persistence, and other outcomes were measured at 6, 12, 24, and 36 months, and stratified by DMD adherence level. RESULTS: 1,538 patients met the selection criteria (baseline age 43.6 years, 63% female). Adherence measured by proportion of days covered (PDC) declined from 82% at 6 months to 67% at 3 months following initiation (medication possession ratio of 79% over the observation period). 42% of patients had discontinued DMD therapy; 22%, 31%, and 47% of patients had PDC<40%, 40% to 79%, and ≥80%, respectively. Non-DMT direct costs ($36,119, $30,277, and $25,886) and indirect costs ($23,194, $16,872, and $13,568) decreased substantially with higher adherence (PDC-40%, 40% to 79%, and ≥80% at 12, 24, and 36 months, respectively). Higher adherence was also associated with lower all cause and MS-related inpatient admissions and emergency visits. Similar trends were observed at 12 months. This study shows adherence to DMT therapy is associated with lower non-DMT medical and indirect costs and decreased health care resource use for MS patients.
reasons for switching and/or non-adherence included: fever (45%), build-up of scar tissue from continued injections (35%), not feeling as if their medication is working (32%), kidney distress (26%), experiencing a relapse (18%) and insomnia (18%). CONCLUSIONS: We set out to learn why patients switched from one drug to another, not just information that a switch occurred. The more we know about patient preferences for their treatment behavior, the better we can plan patient-centric research, development and outreach. Our results demonstrate that using physician/patient interaction data can add tremendous value to outcomes researchers and health care decision makers.

PD37

A RELATIONSHIP BETWEEN EQ-5D HEALTH STATE CLASSIFICATIONS AND VAS SCORES IN PARKINSON’S DISEASE

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OBJECTIVES: Parkinson’s disease is a neurodegenerative disorder with an estimated incidence of 40-50 cases per 100,000 inhabitants per year. The EQ-5D health-related quality of life instrument comprises a health state classification followed by a health evaluation using a visual analogue scale (VAS). In this paper, we examine the correspondence between VAS scores and health state classifications for a Mexican sample, and identify variables which contribute to determining the VAS scores.

METHODS: A Mexican retrospective study of patients having Parkinson’s disease from the National Institute of Neurology and Neurosurgery (NNNN) provided EQ-5D health state classifications, severity, age, psychosis and socio-demographic characteristics. For each patient, the correspondence between VAS scores and health state classifications for a Mexican sample were fitted using linear regression. Logistic models were fitted to determine what factors made the highest impact in the correspondence between VAS scores and health state classifications for a Mexican sample.

RESULTS: VAS scores were significantly correlated with health state classifications, severity, age, psychosis and socio-demographic characteristics. CONCLUSIONS: VAS scores were influenced by the patient’s educational attainment, severity and anxiety/depression were statistically significant fitting the model. In addition, VAS score was influenced also by the subject’s educational attainment (p-value < 0.05, R² = 0.19). Changes in VAS score were explained by changes in both EQ-5D mobility and anxiety. This study sought to quantify the burden that RLS places on patients—especially with regard to health care costs—as little is known about the economic burden of RLS. Results demonstrate that RLS places a significant humanistic and economic burden on patients including loss in work productivity, increased health care utilization, and, as a result, greater direct and indirect costs. CONCLUSIONS: This study sought to quantify the burden that RLS places on patients—especially with regard to health care costs—little is known about the economic burden of RLS. Results demonstrate that RLS places a significant humanistic and economic burden on patients including loss in work productivity, increased health care utilization, and, as a result, greater direct and indirect costs.

PD40

NEEDLE PHOBIA AND ASSOCIATED CLINICAL PRACTICE PATTERNS AMONG PATIENTS WITH MULTIPLE SCLEROSIS (MS) IN EUROPE AND THE UNITED STATES

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OBJECTIVES: To assess the prevalence of needle phobia and associated clinical practice patterns among patients with MS in Europe and the United States (US).

METHODS: A multicenter retrospective chart-review study of MS patients to collect de-identified data on diagnosis, clinical status and treatment approaches. Health care providers (HCPs) identified patients with a diagnosis of MS, RLS and history of phobia. Patients with a diagnosis of MS and history of phobia were matched on demographics to an equally-sized non-diagnosed comparison group. Patients self-reported RLS symptom severity (mild, moderate, severe) and 7.3% had advanced severity; in addition, 16.5% of patients hadn’t been prescribed RLS treatment.

RESULTS: RLS symptom severity was significantly correlated with worse health outcomes and increased costs. CONCLUSIONS: RLS symptom severity was significantly correlated with worse health outcomes and increased costs. CONCLUSIONS: RLS places a significant burden on patients—especially with regard to health care costs. This study sought to quantify the burden that RLS places on patients—especially with regard to health care costs.

PD41

PERSONALIZING MEDICINE BY PATIENTS WILLINGNESS TO MAKE RISK-BENEFIT TRADE-OFFS

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OBJECTIVES: Relapsing-remitting multiple sclerosis (RRMS) patients have a variety of disease modifying treatment (DMT) options available to them. Risks and side effects of injection-site reactions, flu-like symptoms, or other tolerability/side-effect safety concerns may be reported as the reason for discontinuation in 43% (EU5) to 50% (US) of patients. Patient refusal was the most common reason that patients with injection concerns, 40% in the EU and 30% in the US were not currently on treatment, compared with 29% and 20%, respectively, who did not report a reason for discontinuing treatment. In the final analysis after removing incomplete or incoherent responses, they were 26% and 21% of patients having college or higher education compared to 21% of patients having high school education. CONCLUSIONS: Needle phobia may add to the humanistic burden of MS and may lead to treatment discontinuation and potentially poorer treatment outcomes. Further research is warranted to quantify this burden and devise strategies to alleviate it.

PD42

VALIDATION OF THE UNITED STATES HUNTINGTON’S DISEASE QUALITY OF LIFE BATTERY FOR CAREGIVERS

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OBJECTIVES: To assess the acceptability and validity of an expanded scale measuring risk-benefit preferences. Methods: A questionnaire was distributed to 846 patients (78% completed). Mean age 58.1, 56% male, 12% were propagation score matched on demographics to an equally-sized non-diagnosed comparison group. Patients self-reported RLS symptom severity (mild, moderate, severe), health care resource use and work productivity costs. Of health care use and work productivity costs were extrapolated from existing governmental estimates and applied to NWHs averages. RESULTS: RLS patients, when compared to matched controls, reported significantly higher Health Care Provider (HCP) visits (7.46 vs. 4.42, p<0.001), Emergency Room (ER) visits (0.45 vs. 0.24, p<0.001), and hospitalizations (0.24 vs. 0.15, p<0.001) than controls over the previous 6 month period. RLS patients also reported a significantly greater percentage of absenteeism (8.10 vs. 3.92, p<0.001), presenteeism (26.48 vs. 17.69, p<0.001), and activity impairment (46.11 vs. 29.70, p<0.001). RLS patients accumulated more direct ($28,871 vs. $17,619, p<0.001) and indirect (10% vs. 19%, p<0.001) costs, and RLS patients reported 37% statistically significantly more Health Care Provider (HCP) visits, 46% more ER visits, 57% more hospitalizations, and 41% more absences from work. CONCLUSIONS: RLS patients accumulated more direct and indirect costs, and RLS patients reported more Health Care Provider (HCP) visits, Emergency Room (ER) visits, and hospitalizations. From these, patients’ acceptable risks to improved health states with treatment. From these, patients’ acceptable risks to improved health states with treatment.