expectations and preferences with self-reported outcomes and satisfaction. In this report we evaluate the psychometric performance of the Migraine Treatment Satisfaction measure (MTS) using participants from a randomized controlled trial of headache management. METHODS: Enrolled migraineurs completed the first two modules of the MTS upon enrollment in the treatment program and the final two modules at six-months. Internal consistency reliability was computed within each of the four modules. Discriminant validity was ascertained by comparison with the Migraine Disability Assessment Questionnaire (MIDAS), Patient Health Questionnaire (PHQ-9), and Migraine Symptom Frequency and Bothersomeness (MSFB) scores. For convergent validity, Pearson’s correlation was used to measure associations between MTS scores, general health status (SF-36), MIDAS and MSFB. RESULTS: Overall, 124 migraineurs (mean age 45.4 years, 75% women, 54.1% Caucasian) were enrolled. Internal consistency statistics for the expectations, outcomes, importance ratings, and satisfaction measures were within acceptable ranges (0.83, 0.86, 0.85, and 0.95, respectively) and were consistent with earlier development work for this measure. Satisfaction (MTS) decreased significantly as depression (PHQ-9 scores) increased. MTS scores by symptom bothersomeness tertiles and symptom frequency tertiles showed a significant decrease in satisfaction among those experiencing moderate-severe symptom bothersomeness and symptom frequency. Derived MTS scores showed strong associations with MSFB scores (r = 0.301; p < 0.01), MIDAS (r = 0.267; p < 0.01), general health (r = 0.253; p < 0.05), mental health (r = 0.217; p < 0.05) and vitality subscales of SF-36 (0.214; p < 0.05). Patients on triptans reported a significantly higher satisfaction compared to patients on analgesics (39.5 vs. 32.9; p < 0.05). CONCLUSION: MTS can be considered as a valuable instrument to be used for the description of migraine treatment satisfaction.

**DEVELOPMENT OF A UNIQUE INTERNET & PHONE BASED SYSTEM TO CAPTURE MIGRAINE TREATMENT OUTCOMES**

**PNL16**

**DEVELOPMENT OF A UNIQUE INTERNET & PHONE BASED SYSTEM TO CAPTURE MIGRAINE TREATMENT OUTCOMES**

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**OBJECTIVES:** To develop a patient-reported outcomes data collection system using the internet or the telephone for migraine patients being treated with Relpax (eletriptan HBr). METHODS: Physicians provided medication and study information to eligible migraine patients in their practice willing to participate. Patients were able to access the data collection system (The Relpax Challenge), either via the Internet or an interactive voice response system (IVR). Patient kits contained preprinted ID numbers that mapped them to their physicians. Upon enrolling, migraineurs answered a baseline survey of demographic information, migraine experience and associated health care utilization, and a prior migraine medication satisfaction survey. Following the baseline survey, patients were then asked to rate their satisfaction to treatment for three subsequent Relpax treated migraine attacks. Data was collected over an SSL protected website and stored in a SQL server database. The website was developed using Macromedia and ensured a user-friendly environment for data entry. The IVR also repositioned data into the same data warehouse. RESULTS: Currently 3604 registered physicians have completed questionnaires for 5837 Relpax treated attacks. The majority of the respondents were female (87.53%) with an average age of 37.5 years. Forty-four percent completed data on all three attacks, of which 93.1% indicated that they would take Relpax again. Migraineurs were satisfied (four or five on a five point scale) with their relief of pain (70.20%), speed of relief (60.10%), relief of nausea (50.91%), relief of sensitivity to light (58.10%), relief of sensitivity to sound (57.29%) and their ability to return to their daily (57.29%). CONCLUSIONS: Utilizing this technology, we have created a reliable and easy-to-use internet and phone based system for collecting patient reported outcomes. Satisfaction with Relpax treatment as well as other treatment outcomes were consistent with the results observed in the Relpax clinical trials.

**NEUROLOGICAL DISORDERS—Multiple Sclerosis**

**EFFECT OF IMMUNOMODULATORY THERAPY AND OTHER FACTORS ON PRODUCTIVITY IN MS**

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**OBJECTIVE:** Examine factors that influence work days missed among employees diagnosed with multiple sclerosis (MS). METHODS: This retrospective analysis used a claims database with inpatient and outpatient visits, prescription drug services, and time missed from work for the years 1999 through 2002. Employees with a diagnosis of MS were identified and examined over the calendar year of first observed diagnosis in the database (N = 284). Multivariate regressions controlling for demographic characteristics, overall severity of illness, and type of immunomodulatory medication examined factors that influence days missed from work. RESULTS: Demographic characteristics, overall severity of illness, and type of immunomodulatory therapy all impacted time missed from work. Individual comorbid diagnoses had no impact on time missed from work. Comparing individuals treated with interferon beta-1a (intramuscular), interferon beta-1b, or the specific immunomodulator glatiramer acetate to those who received no treatment for MS revealed that only glatiramer acetate was associated with significantly fewer days missed from work for short term disability (18.2 weeks, less, p = 0.04) or any reason (25.7 fewer days, p = 0.003). Average wage estimates of $22.18 and research that reveals productivity lost due to absence averages 1.61 times the wage suggest an annual productivity savings of $15,340 associated with glatiramer acetate. CONCLUSIONS: Demographic characteristics and overall severity of illness impact time missed from work for employees diagnosed with MS. Only MS treatment with glatiramer acetate was associated with significantly fewer days of work missed.

**THE IMPACT OF MEDICARE PART D ON ECONOMIC BARRIERS TO PRESCRIPTION MEDICATIONS AMONG BENEFICIARIES WITH MULTIPLE SCLEROSIS**

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**OBJECTIVES:** 1) Identify the prevalence of access barriers to prescription medications among beneficiaries with Multiple Sclerosis (MS); and 2) estimate the out of pocket price of commonly used prescription medications among insured and under-insured MS beneficiaries. METHODS: Using claims data from the Medicare Current Beneficiary Survey (MCBS) 1992–2001, we identified 156 beneficiaries with a diagnosis of multiple sclerosis on four or more claims (ICD-9 340). The MCBS is an overlapping panel survey linked to associate claims that includes questions on out-of-pocket price, access, and use of prescription medications. We estimated the average out-of-pocket price of prescription medications and prevalence of perceived economic barriers to address the hypothesis that the expansion of Medicare
to include an outpatient drug benefit will decrease beneficiaries’ burden of multiple sclerosis. RESULTS: Few MS beneficiaries (5%) reported that they did not get prescription medications that were prescribed for them. Some beneficiaries (15%) reported delaying health care due to the cost. The average out-of-pocket cost of commonly used medications (e.g., baclofen (Baclofen®), interferon beta-1B (Betaseron®), and fluoxetine (Prozac®)) among the insured is about half the price borne by the under-insured beneficiaries. For example, interferon beta-1B is $27 per prescription among insured beneficiaries, and $58.50 among under-insured beneficiaries. Similar results were found for other medications that are common among MS beneficiaries. CONCLUSIONS: Our findings suggest that MS beneficiaries perceive few economic barriers to necessary health care, particularly prescription medications. However, we find substantial differences exist in the out-of-pocket price of commonly used medications between under-insured and insured beneficiaries. These differences should attenuate with the expansion of Medicare to include a drug benefit decreasing the economic burden of multiple sclerosis.

**DEVELOPMENT OF THE MULTIPLE SCLEROSIS TREATMENT SATISFACTION QUESTIONNAIRE (MSTCQ)**

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OBJECTIVE: To develop a measure of treatment satisfaction that assesses attributes specific to injected medications for multiple sclerosis (MS). METHODS: Item development for the MS Treatment Satisfaction Questionnaire (MSTCQ) was initiated with review of MS websites, literature, adverse effects, as well as interviews and focus groups with MS patients. Pilot testing resulted in aggregation of items postulated to assess adverse effects, difficulty of use, inconvenience, and discomforts. The MSTCQ test instrument included nine items describing “Satisfaction with the Injection System” and 11 items describing “Side Effects.” The instrument was completed by 317 patients, ages 18–60 years, who had been using interferon-beta-1a subcutaneously for > six-months. RESULTS: The “Satisfaction with the Injection System” subscale fit a one-component solution with internal consistency coefficient with good cross-sectional reliability (α = 0.70). A principal components analysis of the 11 items assessing “Side Effects” resulted in a three-component solution: flu-like side effects (α = 0.82); injection-site reactions (α = 0.68), and global items (α = 0.75). Test-retest reliabilities at one-week (N = 55) were Satisfaction r = 0.68 (intraclass correlation coefficient); Side Effects: flu-like side effects, r = 0.86; global evaluation of side effects, r = 0.77; injection site side effects, r = 0.73. Almost all correlations were statistically significant (p < 0.001). Correlations with demographic variables showed significant associations with the MSTCQ total and subscale scores. Age, falling behind in work and home activities, and level of activity/independence exhibit the most consistent relationships to the various MSTCQ measures. CONCLUSIONS: The initial development and testing shows that the MSTCQ should provide insight into the concerns of MS patients about their use of injected medications. These data indicate that older respondents and respondents who are relatively more active and independent have a more favorable view of their MS treatment.

**NEUROLOGICAL DISORDERS—Other**

**RESTLESS LEGS SYNDROME PLACES A SUBSTANTIAL BURDEN ON THE HEALTH-RELATED QUALITY OF LIFE OF US AND EUROPEAN PATIENTS**

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OBJECTIVES: Restless Legs Syndrome (RLS) is a sensorimotor disorder resulting in a desire to move the limbs, which often leads to severe sleep disturbances. This study aims to compare the health-related quality of life (HRQOL) burden that RLS places on US and European (EU) individuals. METHODS: Analyzed cross-sectional data (with screening, RLS symptom, and SF-36 items) from EU (France, N = 75; Germany, N = 25; Italy, N = 42; Spain, N = 37; UK, N = 44) and US (N = 158) samples. SF-36 scores of persons with RLS were compared with patient (type-2 diabetes, depression, osteoarthritis [OA]) and US general population norms. Regression methods were applied to estimate sociodemographically adjusted norm values and test for significance. Comparisons to norm were conducted: 1) maintaining the case-mix of conditions that both RLS and general population respondents presented (“total” burden); 2) statistically adjusting for conditions not attributed to RLS (“unique” burden). Burden is defined as a negative deviation in SF-36 scores from norm associated with the presence of a medical condition (e.g. RLS). RESULTS: Relative to an average adult, total burden ranged from 0.44 to 1.07 standard deviations (SD) below general population norm for US, and 0.49 to 1.04 SD for EU. Relative to an average healthy adult, the unique burden ranged from 0.63 to 1.36 SD and from 0.91 to 1.48 SD below norm for both US and EU samples, respectively, (where 0.5 SD is viewed as meeting standards of minimal clinically important difference). US RLS sufferers reported the greatest burden on physical domains; EU on mental health. For both samples, RLS burden was greater than type-2 diabetes and OA, and similar to depression. CONCLUSIONS: RLS places a sizable burden on HRQOL—similar for US and EU samples, affecting both physical and mental health. The EU sample is more affected in mental health; the US sample is more affected in physical health.

**FUNCTIONAL LIMITATIONS, MENTAL HEALTH, AND RESOURCE USE ASSOCIATED WITH THE HEALTH-RELATED QUALITY OF LIFE OF PATIENTS WITH RESTLESS LEGS SYNDROME**

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OBJECTIVES: Restless legs syndrome (RLS) is a sensorimotor disorder characterized by an irresistible urge to move the limbs, which often results in disturbed sleep. This study aims to contextualize the impact of RLS on health-related quality of life (HRQOL) in terms of functional limitations, mental health and resource use. METHODS: Cross-sectional data from an omnibus questionnaire (with screening and RLS symptom items) and the SF-36 Health Survey (to assess HRQOL) from a US sample of 158 participants with RLS were analyzed. Capitalizing on prior work that linked external criteria to patients differing in general health self-evaluations, we assessed SF-36 physical and mental