comparison to evaluate the efficacy and safety, with the study of Jiao and cols., an hypothesis generated in correspondence with this efficacy and the Hoehn and Yahr states, an analysis of incremental cost-effectiveness ratio (ICER) was performed. We used a markov model to estimate the CE and performed sensitivity analyses and varying disease progression parameters and costs. The outcome of effectiveness was gained NAb testing. RESULTS: For patients with positive NAb in monotherapy, treatment with levodopa had lower costs and more effectiveness than pramipexole, rasagiline and selegiline treatments. With a time horizon of 5 years, levodopa was 5.04 life years gained and cost $336,750.52, the cost of selegline was $247,094.21 with 4.1 life years gained, pramipexol had a cost of $247,420.46 with 4.1 life years gained and finally rasagiline $254,006.56 with 3.17 life years gained, all values of ICER were less than one GDP per capital. This result showed that levodopa was the dominant alternative. The sensitivity analysis of VDOS in monotherapy showed the major effectiveness and the lower cost compared to pramipexole, rasagiline and selegiline treatment. Treatment option in patients with early Parkinson disease (measured by UPDRS) in monotherapy.

**PN36**

THE COST-EFFECTIVENESS OF LISDEXAMFETAMINE DIMEYSYLYTE FOR THE TREATMENT OF BINGE EATING DISORDER

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OBJECTIVES: Lisdexamfetamine dimesylate (LDX) demonstrated efficacy in terms of reduced binge eating days per week in adult (18-55 years old) with binge eating disorder (BED) in a randomized controlled trial (RCT). This study examines the cost-effectiveness of LDX compared to placebo for the treatment of adult BED patients in the United States (U.S.).

**METHODS:** A decision-analytic Markov cohort model comparing LDX to placebo was developed using 3-week cycles and a 52-week time horizon. Based on the 5th Edition of the Diagnostic and Statistical Manual of Mental Disorders criteria of BED, the model comprised the following health states:

1. **No NAb:** LDX treatment gained 0.0064 quality-adjusted life years (QALY) compared to patients on placebo.
2. **NAb:** Treatment with LDX had lower costs and more effectiveness than placebo.

RESULTS: Based on ICER, LDX therapy was considered cost-effective at the commonly used willingness-to-pay thresholds in the U.S. There is a need to generate additional scientific evidence supporting long-term benefits of LDX therapy for BED.

**CONCLUSIONS:** In the 4th quarter after the index date. Furthermore, patients with and without other disease-modifying treatment (DMT) during the pre-period were examined. Patients with characteristics, MS-related inpatient stays, and corticosteroid use were compared in both periods using paired statistical tests, where appropriate. The study included 193 patients, mean age 37.1 years (standard deviation 10.2), 64.8% female. The majority (75.1%) used a DMT during the pre-period and was used for all patients with MS-related inpatient stays (47.9% versus 14.0%, P < 0.001), MS-related inpatient costs (mean $3,759 versus $815, P < 0.001), and length of stay (mean 7.6 days versus 2.7 days, P < 0.001) compared to the pre-period. In patients without pre-period DMTs, there was a significant reduction in the percentage of patients with MS-related inpatient stays (–77.3% P < 0.001) and costs (–3052.0, P < 0.001) and patients with DMTs in the pre-period inpatient costs (–78.0% P < 0.001), and inpatient costs (–78.0% P < 0.001 for both).

**CONCLUSIONS:** In Germany, the initiation of natalizumab was associated with significant decreases in MS-related inpatient stays, and corticosteroid use with corresponding decreases in the average length of stay and costs among natalizumab users with and without DMTs in the prior year.

**PN37**

THE IMPACT OF NEUTRALIZING ANTIBODY TESTING ON THE COST-EFFECTIVENESS OF INJECTABLE DISEASE MODIFYING TREATMENTS FOR RELAPSING REMITTING MULTIPLE SCLEROSIS (RRMS)

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OBJECTIVES: To evaluate the cost-effectiveness of glatiramer acetate (Copaxone®) for relapsing-remitting multiple sclerosis (RRMS) compared to interferons (IFNs) in scenarios with and without routine NAb testing. RESULTS: In a cost-effectiveness analysis of LDX compared to placebo in the U.S., the ICER was $27,512 per QALY gained vs placebo and was shown to be cost-effective given a willingness-to-pay threshold of $50,000. CONCLUSIONS: Treatment of BED with LDX showed an increase in QALYs at an acceptable cost and considered cost-effective at the commonly used willingness-to-pay thresholds in the U.S. There is a need to generate additional scientific evidence supporting long-term benefits of LDX therapy for BED.

**CONCLUSIONS:** The introduction of natalizumab (index date) between 1/1/2009 and 12/31/2012. Patients had 24 months of continuous enrollment (12 months before [pre-period] and 12 months after the index date) and at least one natalizumab prescription in the 4th quarter after the index date. Furthermore, patients with and without other disease-modifying treatment (DMT) during the pre-period were examined. Patients with characteristics, MS-related inpatient stays, and corticosteroid use were compared in both periods using paired statistical tests, where appropriate. The study included 193 patients, mean age 37.1 years (standard deviation 10.2), 64.8% female. The majority (75.1%) used a DMT during the pre-period and was used for all patients with MS-related inpatient stays (47.9% versus 14.0%, P < 0.001), MS-related inpatient costs (mean $3,759 versus $815, P < 0.001), and length of stay (mean 7.6 days versus 2.7 days, P < 0.001) compared to the pre-period. In patients without pre-period DMTs, there was a significant reduction in the percentage of patients with MS-related inpatient stays (–77.3% P < 0.001) and costs (–3052.0, P < 0.001) and patients with DMTs in the pre-period inpatient costs (–78.0% P < 0.001), and inpatient costs (–78.0% P < 0.001 for both).

**CONCLUSIONS:** In Germany, the initiation of natalizumab was associated with significant decreases in MS-related inpatient stays, and corticosteroid use with corresponding decreases in the average length of stay and costs among natalizumab users with and without DMTs in the prior year.

**PN40**

SKILLFUL MUSCLE ACTIVITY AND RESOURCE TOOL FOR SPORADIC INCLUSION BODY MYOSITIS (SIBM): CHARACTERIZATION OF RESOURCE UTILIZATION AND FINANCIAL BURDEN EXPERIENCED BY SIBM PATIENTS

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OBJECTIVES: sIBM is a progressive idiopathic inflammatory myopathy characterized by atrophy and weakness of proximal and distal muscle groups, knee extensions and wrist/finger flexors and dysphagic processes are frequently involved. Progressive weakness results in loss of independence and need for assistive devices and supportive care. The progressive nature of sIBM leads to increasing medical expenses, many of which are not covered by third-party payers, making quantification difficult using existing databases. SMART-IBM, a self-report tool, was developed to better characterize out-of-pocket expenditures and non-reimbursable items not captured by health care systems. METHODS: SMART-sIBM was developed based on in-depth interview data from 20 sIBM patients, review of existing resource-use measures, and input from clinical experts (n=9). SMART-sIBM captures resource utilization and financial burden experienced by sIBM over a 6-month period. Patients reported on general health insurance and out-of-pocket costs and third-party payer expenses. A cross-sectional study (n=102 sIBM patients) was conducted in the US to gather preliminary resource utilization and patient-reported data. Draft versions were reviewed by clinical experts and patients. RESULTS: Patients had a mean age of 66 years, disease duration of 1-8 years, and varied physical limitations. All patients reported need for frequent health care visits, and 80% indicated need for house/vehicle modifications and purchase of assistive equipment to accommodate sIBM-related disabilities. Nearly one-third of patients required paid help with household tasks, while more than one-half relied on unpaid caregivers (e.g., spouse, friend). Nearly half (45%) reported changes in job status because of sIBM-related functional limitations. CONCLUSIONS: Results of

this study demonstrate, for the first time, the high resource utilization and financial burden experienced by sIBM patients in the USA. Further data collection of this type is needed to better understand the true economic burden of sIBM not only in US but globally.

NEUROLOGICAL DISEASES – Patient-Reported Outcomes & Patient Preference Studies

PN41 DESCRIPTION OF PROPHYLACTIC DRUG UTILIZATION PATTERNS IN MIGRAINE PATIENTS

Sapra S1

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OBJECTIVES: To describe medication utilization patterns of migraine prophylactics in commercially insured patients. METHODS: Adult sacntrine (ICD-9 code 346. XX) newly initiating migraine prophylactics (no claims for 12 months before first (index) prophylactic prescription) between January 2007 and March 2013 were identified from the OptumInsight employer claims database and followed for 6 months. Prophylactics included antiepileptics (topiramate, divalproex, valproic acid), beta-blockers (propranolol, timolol), antidepressants (amitriptyline and onabotulinumtoxin A). Continuous enrollment was required for 12 months pre-index and 6 months post-index. To increase the specificity of migraine prophylactics, patients with prior diagnoses for conditions for which their prescribed prophylactics were also indicated (e.g., depression, anxiety, other headaches, hyperhidrosis, arterial spasms and vascular headaches) were excluded. Outcomes of interest were medication adherence (medication possession ratio [MPR]), discontinuation (>30-day gap between prescriptions), and switching patterns. RESULTS: This study included 19,881 patients initiating prophylactic treatment with 12,136 (61%), 2,037 (15%), 1,230 (21%), and 545 (3%) patients initiating antiepileptics, beta-blockers, amitriptyline, and onabotulinumtoxin A, respectively. Mean (SD) MPR for any prophylactic was 0.49 (0.31) (0.27)–valproic acid to 0.67 (0.22)–onabotulinumtoxin A with a mean (SD) of 89.2 (56.7) days on treatment over 6 months. Discontinuation rates were high ranging from 74% (topiramate and onabotulinumtoxin A) to 90% (valproic acid), switching rates ranged from 6% (topiramate) to 20% (valproic acid). Between 46% (topiramate) and 68% (timolol) patients discontinued treatment after the first prescription, and median days to discontinuation of initial treatment ranged from 30 (valproic acid, divalproex, timolol, amitriptyline) to 84 days (onabotulinumtoxin A). CONCLUSIONS: Adherence to migraine prophylactic medications was poor with about 50% of patients discontinuing after their first prescription and over 75% discontinuing within 6 months. The large proportion of patients discontinuing after their first prescription is needed for reasons on discontinuation and better tolerated therapies.

PN42 A REVIEW OF METHODOLOGIES USED TO ASSESS ADHERENCE TO DISEASE MODIFYING THERAPIES AMONG PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES: To review the methods currently used to measure adherence to oral and injectable disease modifying therapies (DMTs) in multiple sclerosis (MS) patients. METHODS: A systematic literature review using PubMed, CINAHL, PsycINFO, and Cochrane Library to identify articles assessing adherence to DMTs. The publication time frame was from January 2004 to November 2014. Studies were included if at least one U.S. FDA-approved oral or oral DMT, assessed DMT adherence as either a primary or secondary outcome, reported DMT adherence rate(s), and included details of the method(s) used to calculate adherence level or proportion of adherers/non-adherers. RESULTS: A total of 68 studies were selected in systematic review. Among these studies, Multiple Sclerosis Treatment Adherence Questionnaire (MS-TAQ), Medication Event Monitoring System (MEMS), adherence diary, self-reported survey items (designed specifically for respective study), Morisky 4-item medication adherence scale, and Cloyd adherence scale were commonly used. CONCLUSIONS: For future research, it is needed on reasons for discontinuation and better tolerated therapies.

PN43 ADHERENCE AND PERSISTENCE TO ANTI-EPILEPTIC DRUGS AMONG U.S. VETERANS DIAGNOSED WITH EPILEPSY

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OBJECTIVES: To evaluate patient adherence and persistence to anti-epileptic drug (AED) therapy among U.S. Veterans Affairs (VA) adult patients with recently diagnosed epilepsy. Diagnosis claims (ICD-9 CM-345) or one epilepsy diagnosis claim and one claim for other convulsion (ICD-9 CM-780.39) were selected from the U.S. Veterans Health Administration database (0101CT009–08/30/2017). Patients were required to have ≥1 AED prescription post-epilepsy diagnosis, and the first AED prescription claim date was designated as the index date. Continuous health plan enrollment prior to and post-index dates was required. Patients were assigned to four monotherapy AED cohorts based on drug class: sodium channel blockers (SCs), gamma-aminobutyric acid analogs (GABAAs), synaptic vesicle protein 2A binding (SV2) and multiple mechanisms (MMMs). Adherence was assessed using the proportion of days covered (PDC) and days on treatment was calculated with an allowable treatment gap of 45 days without the index AED. Logistic and Cox proportional hazards models were used to compare the results among the four cohorts.

OBJECTIVES: To review the methods currently used to measure adherence to a drug. METHODS: A systematic literature search was conducted using PubMed, CINAHL, PsychINFO, and Cochrane Library to identify articles assessing adherence to DMIs. The publication time frame was from January 2004 to November 2014. Studies were included if at least one U.S. FDA-approved oral or oral DMT, assessed DMT adherence as either a primary or secondary outcome, reported DMT adherence rate(s), and included details of the method(s) used to calculate adherence level or proportion of adherers/non-adherers. RESULTS: A total of 68 studies were selected in systematic review. Among these studies, Multiple Sclerosis Treatment Adherence Questionnaire (MS-TAQ), Medication Event Monitoring System (MEMS), adherence diary, self-reported survey items (designed specifically for respective study), Morisky 4-item medication adherence scale, and Cloyd adherence scale were commonly used. CONCLUSIONS: For future research, it is needed on reasons for discontinuation and better tolerated therapies.

PN44 MEASURING ADHERENCE AND OUTCOME IN TREATMENT OF MULTIPLE SCLEROSIS IN THE GEISINGER CLINIC

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OBJECTIVES: This study examined the relationship between medication adherence and outcomes in multiple sclerosis (MS), where both concepts are more difficult to measure than in diseases like hypertension where most medications are taken orally and the ease of obtaining the adherence measures are straightforward. METHODS: MS patients age ≥18 years treated at Geisinger Clinic and taking an MS medication were surveyed three times, six months apart, to assess medication adherence and MS outcomes. Patients reported their doses taken in the past month (adherence), number of medication satisfaction scores (MSS) and MS physical and psychological functional scores. Nonparametric bootstrap analyses were used to compare mean outcome scores among patients with and without missed doses. A sub-analysis on patients with Geisinger insurance claims was conducted to calculate patient’s MS medication possession ratio (MPR) from 2004 to 2013 and compare this claim-based adherence measure with the other results. RESULTS: 306 patients completed 971 surveys. Most patients were white (95%), female (85%), ages 22 to 76 years with 15 years of disease since diagnosis. The mean (SD) age was 52.9 (13.8) years. Mean self-reported adherence was 90% (±42%), 98% (±35%), 100% (±0%) (0) patients discontinued treatment after the first prescription and over 75% discontinuing within 6 months. The large proportion of patients discontinuing after their first prescription is needed for reasons on discontinuation and better tolerated therapies.

PN45 WHAT ARE PATIENTS WILLING TO PAY FOR WHOLE GENOME SEQUENCING INFORMATION?

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OBJECTIVES: Whole genome sequencing (WGS) can be used to predict future disease risk or inform treatment. Current guidelines suggest only reporting variants that are clinically actionable. Reporting incidental or non-actionable findings could generate anxiety and unnecessary medical tests, but patients could miss valuable information if not reported. Over-treatment may occur by acting on findings prematurely, potentially causing harm and unnecessary resource use. We measure the value of WGS information using contingent valuation methods. METHODS: An online pilot survey (n=26 adults from US general population) was used to evaluate willingness to pay for a basic WGS report (recommended by guidelines), and genetic information excluded from the basic report (non-actionable findings) to inform a national survey. RESULTS: Most respondents were initially asked whether they would purchase a basic WGS report for $490 and 12% (n=13) were willing to pay anything for the basic report. The majority (63% (95% CI 44%–72%)) of respondents were not willing to pay anything for the basic report, and no respondent was willing to pay more than $1000 for the basic report. Most respondents (n=17, 65%) were not willing to pay anything for non-actionable genetic information, and only one person (3%) was willing to pay anything for the basic report. CONCLUSIONS: A large number of participants perceived that genetic information can be harmful, as shown by respondents’ lack of interest in this information even if it were free. Our findings also suggest that respondents were willing to pay more for actionable genetic information than for non-actionable findings.