higher risk of relapse, lower quality of life and higher medical costs. The adherence measure, persistency, refers to the duration a patient continues with therapy. This study aims to evaluate the non-pharmacy medical costs associated with the persistency of DMTs in patients with MS. METHODS: A decision-analytic model was designed using health care resource use and costs from the published literature. The model evaluated the medical costs associated with the persistency, switching, and discontinuation rates of patients on interferon β1a IM, interferon β1b SC, and interferon β1a SC over a 2-year time horizon. Using 6-month intervals in the model, patients were separated into a comparator treatment, a continued treatment, or persist on their current treatment, and would incur the non-pharmacy medical costs associated with each. For patients who switched treatments, the model assumed an equal probability of switching to the three remaining DMTs. The model also assumed that the continued treatment therapy would initiate on a different therapy after one month of discontinuing. The overall medical costs related to persisting on treatment, switching treatment or discontinuing treatment were calculated for all treatment arms. RESULTS: Based on the results from the model, an annual per-patient medical cost of €7423 was observed for interferon β1a IM patients, showing a medical cost advante over patients on interferon β1b SC (€8114; 8.9%), and interferon β1a SC (€7552; 1.7%). CONCLUSIONS: MS is a lifelong disease that requires continuous treatment. The results of this model show that interferon β1a IM is a cost-saving treatment for the medical costs associated with MS patients on disease modifying therapies.

**PND9**

### THE POTENTIAL COST IMPACT OF USING A PEG HYDROGEL SEALANT COMPARED WITH FIBRIN SEALANT TO PREVENT CEREBRAL SPINAL FLUID LEAKS AFTER CRANIAL SURGERY IN THE UK

**OBJECTIVES:** Cerebrospinal fluid (CSF) leak is an unavoidable consequence of cranial surgery with leak rates between 0% to 25% and resulting costs ranging from £9,000 to £36,000. The use of polyethylene glycol (PEG) hydrogel dorsal seal as an adjunct to sutured closure has been shown to reduce CSF leak rates as compared with sutures alone in cranial procedures (GR Cosgrove et al., 2007). Our hypothetical analysis applied the potential cost offsets of using PEG hydrogel sealant as an adjunct to sutured closure in 200 cranial procedures assuming CSF leak rates of 4.5% (9200) (GR Cosgrove et al., 2007), with 10% (20000) for fibrin sealant (JA Grotenhuis, 2005). METHODS: The incremental additional cost for treating CSF leaks using total patient costs for those with CSF leaks (€38253) compared to those without CSF leaks (€10,497) was estimated at €14,756 in a Dutch study (JA Grotenhuis, 2005). We applied this CSF leak cost to estimate potential UK hospital cost offsets on 200 hypothetical cranial patients using PEG hydrogel sealant (€3060treatment), compared with fibrin sealant (€1335treatment) on all 200 patients. RESULTS: Use of a PEG hydrogel sealant compared with fibrin sealant could potentially save €177,611 (or €688/patient) for a hospital that performed 200 cranial surgery procedures using a PEG hydrogel sealant compared with using fibrin sealant on all 200 procedures. CONCLUSIONS: This study demonstrates the potential economic advantages of using a PEG hydrogel sealant in cranial procedures. Future clinical direct comparative studies would be beneficial to confirm these findings and understand the possible economic advantages for other types of cranial surgeries.

**PNDN**

### ASSESSMENT OF DISEASE BURDEN ASSOCIATED WITH EPILEPSY IN HUNGARY, BASED ON A CROSS-SECTIONAL QUESTIONNAIRE SURVEY OF 100 PATIENTS

**OBJECTIVES:** Epilepsy is the second most frequent neurological disease among adults; approximately 50–60 thousand people suffer from epilepsy in Hungary. With our survey we aimed to assess the cost of illness from a societal viewpoint as well as human capital and friction cost methods. We found significant correlation (at 0.05) among all of the quality of life results and the yearly total costs (calculating both with human capital and friction cost methods).

**PND10**

### LONG-TERM DISABILTY COST IN TUBEROUS SCLEROSIS COMPLEX (TSC) IN BRAZIL

**OBJECTIVES:** To estimate long-term disability costs associated with tuberous sclerosis complex, a rare multisystem genetic disease, in Brazil. METHODS: Literature review for TSC long-term disability and economic burden was performed (PubMed, EMBASE, Science Citation Index Expanded, PsycINFO). Cost estimation was limited to epilepsy, due to the lack of published literature on TSC disorder. Cost of lost productivity in patients since epilepsy onset in childhood and carried in adulthood as well as caregivers’ productivity costs were estimated. The Human Capital Method was adopted and potential lost working years estimated till an active age of 65 years. It was assumed a caregiver for all ages. Average income, unemployment rate due to epilepsy, productivity growth and epidemiology data were obtained from the literature and from the Brazilian Institute of Geography and Statistics. Mean annual productivity cost per patient, total productivity cost per patient and the total productivity burden of TSC-related epilepsy were calculated. Costs were estimated in 2008 Reals and discounted at 5%. Univariate sensitivity analysis was conducted for epidemiology data, employment status rate, productivity growth, discount rate and time horizon. RESULTS: Productivity loss was 47, 30 and 65 years for epilepsy onset in childhood and adulthood and caregivers, respectively. The discounted and not discounted mean annual productivity cost per patient were respectively R$1,170 and R$1,323, total productivity cost per patient R$57782 and R$691,150 and total productivity burden of TSC-related epilepsy in Brazil R$5,168,956,961 and R$1,078,5,324,171, respectively (1Euro = 3.24Reals). Results were sensitive to the parameters varied in the sensitivity analysis, especially discount rate. CONCLUSIONS: TSC-related epilepsy is a chronic disorder associated with loss of productivity with a significant economic burden in Brazil. Although significant, the economic burden related to productivity loss is expected to be even higher since there are still costs deriving from absenteeism of patients and caregivers when employed looking for health services to be included in further analysis.
perpective are €5,325 (±9588), €814,048 (±34487) and €41,716 (±32511) at mild, moderate and severe stages respectively in France; €3,125 (±4139), €84,437 (±18374) and €5,069 (±17147) in Italy. Associated EQ-5D utilities are respectively 0.79 (±0.18), 0.39 (±0.37), -0.11 (±0.3) in France; 0.39 (±0.40), 0.39 (±0.42), 0.23 (±0.44) in Italy.

The primary cost driver is productivity loss. In France, hospitalization, and societal costs are the main components of direct costs. For more severely affected patients, medical resource utilization diminishes while caregiver involvement increases significantly (the shift is greater in Italy than France). Physical, mental and social HRQoL domains are all seriously affected. CONCLUSIONS: Euro-HEIB is the first study to comprehensively assess the cost and HRQOL burden of HD. The 1:3 cost ratio (Italy:France) is consistent across most of the cost items, suggesting that differences in health care systems, access to health care and cultural attitudes towards caring for patients at home have a large impact on a country’s overall costs. Results suggest that HD has greater impact on HRQOL than Parkinson’s disease and Alzheimer’s disease.

PATIENT CHARACTERISTICS AND CHARGES ASSOCIATED WITH EMERGENCY DEPARTMENT VISITS AMONG PATIENTS WITH A DIAGNOSIS OF RESTLESS LEGS SYNDROME (RLS) AT THE HEALTHCARE COST AND UTILIZATION PROJECT’S NATIONWIDE EMERGENCY DEPARTMENT SAMPLE

OBJECTIVES: Restless legs syndrome (RLS) affects 2 to 5% of the US population. Limited data exist on patient characteristics and charges associated with emergency department (ED) visits among patients with RLS. METHODS: Data from the 2007 Healthcare Cost and Utilization Project’s Nationwide Emergency Department Sample were used. Patients were selected for inclusion if they had a diagnosis of RLS (ICD-9-CM code 333.94). Study measures included patient demographics and charges associated with the ED visit. Study measures were reported separately for patients with a primary versus secondary RLS diagnosis. Among patients with a secondary RLS diagnosis, the most common primary diagnoses were reported. RESULTS: A total of 6133 patients with a primary RLS diagnosis and 140,931 patients with a secondary RLS diagnosis were identified. Common primary diagnoses among patients with a secondary RLS diagnosis included respiratory symptoms (7.0%), general symptoms (4.6%), and pneumonia (3.7%). Mean (Std. Err.) age was 54.5 (0.6) years among patients with a primary diagnosis and 64.0 (0.3) years among patients with a secondary diagnosis. In both cohorts, over two-thirds of patients were female, the most common geographic regions were the South and Midwest, and Medicare was the most common primary payer (41.0% of patients with a primary diagnosis and 59.3% of patients with a secondary diagnosis). Over 90% of patients with a primary diagnosis had at least one comorbidity. Patients with a secondary diagnosis, and most patients with a secondary diagnosis were admitted to the facility as an inpatient. Mean (Std. Err.) charges were $816 ($48) for patients with a primary diagnosis and $2,043 ($62) for patients with a secondary diagnosis. CONCLUSIONS: This nationally representative study suggests that patients admitted to the ED with RLS accrue substantial costs during their visit. Further research is needed to more fully assess the total economic burden of the disease.

MODELING THE CLINICAL AND ECONOMIC IMPLICATIONS OF MEMANTINE IN THE TREATMENT OF MILD TO MODERATE ALZHEIMER’S DISEASE IN GERMANY

OBJECTIVES: A reimbursement policy issued by the Federal Joint Committee in Germany to reassess the benefit of cholinesterase inhibitors every six months in order to receive continued coverage by the Statutory Health Insurance triggered an additional need to periodically assess the cost-benefit of galantamine in the treatment of mild-to-moderate Alzheimer’s disease (AD). An economic model specifically designed for the purposes of such an assessment was developed using the most up-to-date IQWiG guidelines for cost-benefit assessment. METHODS: The model uses a discrete event simulation to predict the course of AD through changes in cognition, behavioral disturbance, and function over time, and compare the costs and benefits of galantamine versus no-drug treatment and ginkgo biloba, treatment. Clinical data were mainly derived from analyses of pooled data from clinical trials. Epidemiological and cost data were obtained from literature and public data sources. Costs (2009) in Euros were converted to 2008 using the German Statutory Health Insurance were used. Both costs and benefits were discounted at 5%. Sensitivity analyses were performed to assess the robustness of the model outcomes. RESULTS: Over a 10-year period, galantamine on average delays progression of severe stage of the disease by 3.17 and 3.36 months, compared to no-drug treatment and ginkgo biloba, respectively. Galantamine also reduces time spent institutionalized by 2.34 and 2.21 months, compared to no-drug treatment and ginkgo biloba, respectively. The use of galantamine is projected to yield net savings of €3,978 and €3,972 per patient compared to respective treatments. CONCLUSIONS: Our analyses suggest that compared to no-drug treatment and ginkgo biloba, treatment with galantamine not only improves clinical benefits, but also achieves savings in health care costs associated with care for patients with mild-to-moderate AD in Germany.

MEMANTINE DELAYS THE ADMISSION OF ALZHEIMER’S DISEASE PATIENTS TO NURSING HOME: COST-EFFECTIVENESS ANALYSIS IN FRANCE

OBJECTIVES: To evaluate in the French setting the cost-effectiveness of memantine as an add-on therapy to Cholinesterase inhibitors (ChEI) compared to ChEI monotherapy in Alzheimer’s disease (AD) patients. METHODS: A cost-effectiveness analysis employed a 3-state Markov model (“non-institutionalized,” “institutionalized” and “dead”) and compared the treatment alternatives in terms of time to nursing home admission, Quality Adjusted Life-years (QALYs), and costs over a 7-year time horizon. Annual transition probabilities between states were derived from two observational cohort studies: Lopez et al 2009 (US) for institutionalization probabilities and Helmer et al 2001 (FR) for death probabilities. Costs were valued from health care system and societal perspectives, and included cost of AD medications (French National