drug treatment, treatment, polytherapy, low mean seizure free interval, male gender, presence of comorbidities, a mean duration of disease are significantly (p < 0.05) associated with low HRQoL scores. CONCLUSIONS: Epilepsy has a negative impact on their HRQoL. The determinants found by this study will help in framing different strategies to improve patient’s compliance and their HRQoL.

PND49
THE IMPACT OF HERPES ZOSTER ON ABSENTEEISM AND QUALITY OF LIFE AMONG IMMUNOCOMPROMISED PATIENTS
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OBJECTIVES: Little evidence exists on the impact of herpes zoster (HZ) on quality of life (QoL) and work absenteeism for immunocompromised patients. This study describes work absenteeism, and loss in quality of life due to HZ among immunocompromised individuals in the United States, UK, Canada, France and Germany. METHODS: A web-based survey was conducted with adult males and females 18-59 yrs of age, who had had cancer or stem cell transplant (SCT) and HZ (HZ and cancer group); 2) cancer or SCT without HZ (cancer group); and 3) had neither cancer, SCT or HZ (immunocompetent group). Validated measures included the Brief Fain Inventory (BFI), activities of daily living (ADL), the EQ-5D-5L, and the World Health Organization Health and Work Performance Questionnaire (WHO HPQ) for work absenteeism. Multivariable logistic regressions controlling for demographic characteristics and comorbidities examined the impact of HZ on the EQ-5D-5L score and absenteeism relative to the immunocompetent groups. RESULTS: Overall, there were 353 respondents with HZ (HZ and cancer group), 351 with cancer only, and 353 were immunocompetent. HZ patients had average pain scores that were at least 2 and 3 points greater (p<0.001) than the cancer and immunocompetent groups, respectively. Across all ADLs, HZ patients scored 0.5 and 7.3 points lower on the EQ-5D-5L than the cancer and immunocompetent (p=0.01) groups. CONCLUSIONS: HZ patients had greater pain, more absenteeism and lower EQ-5D-5L scores than those without HZ. Despite the higher disease burdens, both cancer and HZ groups on ADLs and pain, these groups reported similar scores on the EQ-5D-5L, suggesting the EQ-5D-5L may not be sensitive enough to capture the impact of HZ.

NEUROLOGICAL DISORDERS – Health Care Use & Policy Studies

PND50
TRIPAT USE AND ASSOCIATED HEALTH CARE UTILIZATION AND COSTS IN ADULTS WITH MIGRAINES
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OBJECTIVES: The objective of this study is to describe treatment utilization patterns and ascertain differences in cost between triptan and non-users, identify socioeconomic-related factors associated with triptan use, define socioeconomic factors such as gender, race, education and income levels might influence triptan use in migraineurs. Triptan treatment use was compared to non-users. The main outcome measure was the impact on migraine-related expenses and is associated with increased total health care costs. The comparison between triptan users, identify socioeconomic-related factors associated with triptan use, define socioeconomic factors such as gender, race, education and income levels might influence triptan use in migraineurs. Triptan treatment use was compared to non-users. The main outcome measure was the impact on migraine-related expenses and is associated with increased total health care costs. METHODS: A web-based survey was conducted with adult males and females 18-59 yrs of age, who had had cancer or stem cell transplant (SCT) and HZ (HZ and cancer group); 2) cancer or SCT without HZ (cancer group); and 3) had neither cancer, SCT or HZ (immunocompetent group). Validated measures included the Brief Fain Inventory (BFI), activities of daily living (ADL), the EQ-5D-5L, and the World Health Organization Health and Work Performance Questionnaire (WHO HPQ) for work absenteeism. Multivariable logistic regressions controlling for demographic characteristics and comorbidities examined the impact of HZ on the EQ-5D-5L score and absenteeism relative to the immunocompetent groups. RESULTS: Overall, there were 353 respondents with HZ (HZ and cancer group), 351 with cancer only, and 353 were immunocompetent. HZ patients had average pain scores that were at least 2 and 3 points greater (p<0.001) than the cancer and immunocompetent groups, respectively. HZ patients had 2 and 3 more hours of absenteeism than the cancer and immunocompetent (p=0.06) groups, and scored 0.5 and 7.3 points lower on the EQ-5D-5L than the cancer and immunocompetent (p=0.01) groups. CONCLUSIONS: HZ patients had greater pain, more absenteeism and lower EQ-5D-5L scores than those without HZ. Despite the higher disease burdens, both cancer and HZ groups on ADLs and pain, these groups reported similar scores on the EQ-5D-5L, suggesting the EQ-5D-5L may not be sensitive enough to capture the impact of HZ.

PND52
THE CHALLENGE OF MANAGING AGE-RELATED DISEASES IN CHINA: EXAMPLE OF ALZHEIMER’S DISEASE
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OBJECTIVES: Despite a rapidly aging population, age-related diseases, such as Alzheimer’s disease (AD), are becoming a great concern in China. The objective of this study was to provide an overview of the future socio-economic impact of AD resulting from the increasing prevalence of AD in China. METHODS: A literature review was done to collect information on the disease management, the demographic projections, and medical capabilities available in China. To answer the questions that emerged from the literature review, focus interviews with key experts and 2 hospital administrative payers were interviewed. RESULTS: It was estimated that there were 10 million cases of AD in China in 2010. As a typical aging disease, the burden of AD in China is expected to continue growing and will continue growing as the elderly population grows. 43% of the Chinese population is expected to be older than 60 in 2050, representing 438 million people. A large imbalance was found between AD management needs and availability of health care services for AD patients, as a result of: 1) Chinese culture of family care for elderly people, while the availability of care in grand parents and 2 parents being cared for by one child, 2) extremely poor awareness of AD in China both publicly and privately (asymptomatic as dementia), and 3) limited medical capabilities for AD. As a result, it is predicted that workload aging differ significantly between these two groups. Further research is warranted to scrutinize the observed treatment patterns and treatment sequencing strategies to alleviate patient burden.

PND53
DRUG EXPENSES FOR ALZHEIMER’S DISEASE IN BRAZIL: A DESCRIPTIVE ANALYSIS
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OBJECTIVES: The Brazilian public health system (SUS) provides donepezil, rivastigmine and galantamine for all individuals with Alzheimer’s disease (AD). The Ministry of Health (MoH) is responsible for the acquisition of rivastigmine and donepezil, whereas the States are responsible for the acquisition of galantamine, reimbursed by MoH. The aim of this study is to characterize patients with AD and the financial resources employed by the MoH. METHODS: Descriptive analysis of the profile of patients and drug expenses, based on data about the amount dispensed and values reimbursed by the MoH in 2012, available in the database of the SUS (current values; exchange rate: US$ 1 = R$ 2.36). Were considered: A) MoH expenses with central acquisition of donepezil and rivastigmine and B) values of galantamine reimburse-ment. RESULTS: In 2012, 119,378 patients with AD were treated with medicines in the SUS. These patients had a mean age of 78.57 years and 65.87% were women. Most of them were treated with rivastigmine (42.98%), followed by donepezil (39.07%) and galantamine (17.95%). The annual costs per patient with galantamine were 17 times higher than donepezil (US$ 1,045.67 with galantamine, US$ 439.78 with rivastigmine and US$ 61.47 with donepezil). The MoH expenses in this period with these drugs summed up to US$ 14,176,227.12. This amount represented 0.73% of the total MoH’s budget of high-cost drugs in 2012. The highest expenses occurred with rivastigmine (76.16%), followed by donepezil (12.09%) and galantamine (11.74%). CONCLUSIONS: Despite the higher cost of treatment with galantamine, the impact with rivastigmine was higher because it is the reference drug. The central acquisition of drugs results in lower treatment cost due to its scale economy and the public development partnerships results, a strategy aimed to strengthen the health industrial complex, the resource optimization and the access to medicines.

PND54
REIMBURSEMENT BASED ECONOMICS: AN APPLICATION TO TRIPATANS FOR MIGRAINE THERAPY
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OBJECTIVES: A multi-center medical chart-review study of MS patients was conducted in 4Q2012 among neurologists to collect de-identified data. Neurologists were screened for duration of practice (> 3 months) and recruited from a large panel to be geographically representative of the US. Medical charts of next 10 consecutive MS patients were assessed by each neurologist to patient diagnosis, treatment patterns and symptomatology. The primary outcome measure was clinical status. MS patients currently treated with 1st-line 2nd-line DMTs were evaluated. RESULTS: 708 RMS
OBJECTIVES: The Ontario Drug Policy Research Network has received provincial government funding to conduct research relating to formulary modernization within the Ontario Public Drug Programs. This innovative, integrated program for drug class reviews incorporates a novel methodological technique called reimbursement-based economics which focuses on reimbursement strategies. The first class related to intrathecal pumps for migraines. In Ontario, intrathecal pumps are currently available through the Exceptional Access Program (EAP). Specific research questions related to the current evidence for the cost-effectiveness of intrathecal pumps and the economic impact of alternative changes to their funding status were examined. 


2. Applied, policy-oriented reimbursement based economic model developed to forecast budget expenditure for each alternative reimbursement strategy (generic pricing, market-based substitution, quantity limits and/or co-payment restrictions). 

RESULTS: 21 economic studies were identified though many had a number of common limitations reducing their usefulness in aiding decision making. The weight of evidence suggests that intrathecal pumps are more cost effective than ergots, in patients experiencing acute migraine. Maintaining intrathecal pumps within the EAP with generic equivalents costing 25% of branded products reduces expenditure by 18%-85%. Greater access to intrathecal pumps with a quantity limit of 6 units per month would increase total expenditures by between 13%-14% assuming per unit price limits would lead to expenditure increases of up to 326%. 

CONCLUSIONS: Evidence suggests that, for migraine, intrathecal pumps are cost effective compared to ergots. Allowing greater access to intrathecal pumps would significantly increase expenditure and may lead to use in a wider population where neither effectiveness nor cost effectiveness has been established. Maintaining intrathecal pump coverage through EAP with generic equivalents costing 25% of branded products combined with generic substitution will reduce total expenditures. Further work will be considered before final recommendations on formulary changes are made.

PDN55
AND THEN THERE WERE THREE: THE BURGEONING MARKET OF ORAL MEDICATIONS APPROVED TO TREAT MULTIPLE SCLEROSIS IN THE UNITED STATES
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OBJECTIVES: The first oral disease modifying therapy (DMT) was approved in the fall of 2013. This paved the way for two more DMTs later this year, with the third gap before the third approval. This study sought to describe and compare patients prescribed one of the three oral DMTs available to treat relapsing forms of multiple sclerosis (MS) in the US. METHODS: Adult patients with a claim for fingolimod, dimethyl fumarate or dimethyl fumarate on or after September 22, 2010 (index) were identified in the Truven Health MarketScan® databases. Patients had an MS diagnosis (ICD-9-CM 340) in the 12 months prior to index, continuous enrollment 12 months pre- and 3 months post-index. Prescriptions for their index drug and the subsequent (barrier-3:49%/21%, barrier-4:65%/84%, no-barrier:17%/4%). Summary statistics are reported. 

RESULTS: In 4Q2012, 360 HCPs (neurologists: 95%, nurses: 5% (from UK only)) participated. Mean age (SEUS)/US):45±5yr; female (SEUS)/US):34%±21%, years practicing in neurology(SEUS)/US):16±10yr; practice-location (~<50% in time in hospital-setting, SEUS):83%±26%, % HCPs seeing MS patients in specialty clinic (SEUS):53%/27%, % HCPs with MS as the main focus area (SEUS):68%/40%. Geographic distribution of HCPs was: US:72% (UK-16%, Germany-6%, France/Spain/Italy 14% each), US:28%. Patient volume/month per HCP was (SEUS): All patients:254/319, MS patients:61/68. MS patient-type was seen (SEUS): relapsing-remitting:52%/58%, relapsing secondary progressive-13%/13%, non-relapsing secondary progressive-13%/12%, primary progressive-5%/6%, clinically isolated syndrome-9%/7%, benign-6%/4%. Average prescriptions written/month for MS-treatments was (SEUS):5/1±6. Key barriers to prescribing interferons were (SEUS): costs:11%±12%, barriers:13%, lack of guidelines:12%, drug-related issues:21%, no-barrier:30%/24%, for glatiramer (SEUS): barrier:14%±12%, barrier:2-9%/18%, barrier:3-8%/6%, barrier:4-6%/26%, no-barrier:28%/8%, for natalizumab (SEUS): barrier:16%±17%, barrier:2-8%/36%, barrier:4-3%/27%, barrier:4-8%/92%, no-barrier:15%/5%, for fingolimod (SEUS): barrier:1-5%/21%, barrier:2-3%/48%, barrier:3-4%/21%, barrier:4-6%/84%, no-barrier:17%/4%. 

CONCLUSIONS: Drug-related issue was the most frequently cited barrier to prescribing MS medications both in SEUS and the US. The US and EU availability/cost and guidelines restrictions were more often cited by HCPs in the US and SEUS respectively. Impact of these barriers on optimal patient management and outcomes may warrant further research.

PDN58
PAYMENT MANAGEMENT OF ORAL MULTIPLE SCLEROSIS THERAPIES IN UNITED STATES
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OBJECTIVE: The purpose of this study was to understand how United States payers manage novel oral, high cost MS medications in consideration of the availability of lower cost, injectable treatments. This includes understanding formulary and formulary administration while in line with the efficacy of oral therapies. METHODS: The respective tier statuses and utilization management of teriflunomide, fingolimod, dimethyl fumarate, interferon beta-1a (AVONEX and REBIF), and glatiramer acetate at 46 plans were audited: 18 Medicare, 12 national private (including PBMs), and 16 regional and state private plans. Access to oral MS treatments was compared to that of injectable treatments in terms of tier, utilization management, and cost sharing. RESULTS: 54% of plans demonstrated preferential coverage of injectable MS therapies over orals, by lower tier status or lighter utilisation management. By segment, regional and state private plans demonstrated the strongest preference for injectables, with 75% of these plans demonstrating this preference compared to 50% of Medicare and 33% of national private plans. Plans employing prior authorisation or step edits to manage oral MS therapies usually stepped orals through injectables. Among oral MS products, national private and Medicare plans tended to prefer fingolimod, with 50% and 61% of plans preferring it over at least one other oral MS product, respectively. 19% of regional and state private plans preferred dimethyl fumarate over at least one other oral MS product. CONCLUSIONS: United States payers take varying approaches to the management of oral MS medications; however, virtually no plans offer preferential access to orals over injectables. The sample is roughly split between plans preferring injectable MS products over orals and those offering roughly parity access.

PDN59
CELF LIP SURGERY: RESULTS FROM THE KIDS’ INPATIENT DATABASE
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OBJECTIVE: The purpose of this study was to understand the utilization of cleft lip surgery among children referred to centers that perform cleft lip surgery. The second most prevalent birth defect in the United States. Previous epidemiological studies of cleft lip surgery have been plagued by multiple design and methodological issues, including failure to adjust costs, grouping of cleft lip only (CL) with cleft lip and palate (CLP) diagnoses, and a lack of a definitive definition of cleft lip-surgery. The current study was to provide national estimates of primary and secondary cleft lip surgery using cohort definitions based on national treatment guidelines. METHODS: The nationally representative Kids’ Inpatient Database (KID) was used to analyze the following years: 2000, 2003, and 2009. Subjects were identified by International Classification of Diseases Ninth Revision (ICD-9) diagnosis of cleft lip only or cleft lip and palate. Primary surgery was defined as surgery before two years of age with the ICD-9 procedural code for cleft lip repair. Secondary surgery was defined as a sur-