estimated budget impact of adding peginterferon beta-1a to the formulation was negative for the first 5 years. In 2014, with a treatment share of 3.0%, the estimated budget decrease was 0.07% of the total annual costs for DMF-treated and relapse treatment costs and a decrease of $0.05 per member per month (PMPM); in 2018, with a treatment share of 7%, the estimated budget decrease was 0.25% of the total annual cost. The estimated decrease of $0.17 per patient per year described that the model was most sensitive to the acquisition costs of peginterferon beta-1a.

CONCLUSIONS: Under model assumptions for market shares, adding peginterferon beta-1a to the MCO formulary would result in a small decrease in MCO costs for patients with relapsing forms of MS.

PND19
HOSPITAL BUDGET IMPACT OF SUGAMMADEX (BRIDION®) FOR REVERSAL OF NEUROMUSCULAR BLOCKADE
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OBJECTIVES: To estimate the budget impact of sugammadex within a typical US hospital.

METHODS: A model was developed to evaluate budget impact of using sugammadex instead of neostigmine or spontaneous reversal in a subset of hospital procedures categorized as those with deep neuromuscular block (NMB) throughout, and at elevated risk of post-operative respiratory complications. Inputs included costs of NMB and reversal agents, operating room (OR) procedure time, value of OR time, risks and costs of residual neuromuscular blockade (RNMB) and associated complications, and reductions in RNMB with sugammadex use. Because trials have shown sugammadex’s impact on OR time and RNMB varies by whether full neuromuscular recovery (train-of-four [TOF] ratio <0.9) is verified prior to extubation and when it is not.

RESULTS: When all patients are verified to have full neuromuscular recovery (TOF ≥0.9, no RNMB) prior to extubation, sugammadex saves an average of 24 minutes in the OR per procedure, with a net cost savings provided at least 10% of OR time saved can be converted to increased throughput. When no patients are verified to have full recovery prior to extubation, disabling residual neuromuscular paresis (RNMB) in the OR per procedure, while reducing the risk of RNMB from 47% to 3%. The incidence of post-operative aspiration, hypoxemia, muscle weakness or upper airway obstruction was reduced from 86 per 100 procedures, to 36 per 100 among patients receiving sugammadex. The analysis of incremental cost-effectiveness of using sugammadex where residual neuromuscular blockade was found to vary according to practices for neuromuscular monitoring and extubation. Use of sugammadex can ameliorate the current tradeoff between OR efficiency and occurrence of RNMB when utilizing neostigmine or spontaneous reversal.

PND20
BUDGET IMPACT OF CHOOSING REBIF® AS THE INTERFERON OF CHOICE FOR THE TREATMENT OF RELAPSING-REMITTING MULTIPLE SCLEROSIS IN THE BRAZILIAN PUBLIC HEALTHCARE SYSTEM
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OBJECTIVES: Currently the clinical protocols for the treatment of relapsing-remitting multiple sclerosis of the public sector in Brazil do not differentiate the interferons available (Avonex®, Betaseron® or Rebif®) and, consequently, an uncertainty of the best treatment choice. The objective of this study was to present a meta-analysis by Filippini et al in 2013, a budget impact analysis was developed to understand the impacts of recommending the use of Rebif® as the interferon of choice. METHODS: A transparent budget modeling tool was developed under the assumption that patients experiencing a relapse would have a 50% chance of switching to another line of therapy. Each treatment relapse rate was calculated from the Philippines 2013 real-world evidence information regarding the risk of having a relapse in 24 weeks during the relapse formulation developed by Zhang and Yu, 1998. Such formula calculates the relative risk from odds ratio information using the “assumed control risk”, which was calculated by the pondered average rate of relapses occurring in all related trials. placebo patients in 2014 direct costs were calculated including medications and hospital costs obtained at the DATASUS database. The number of patients was estimated by the number of treatments provided at the year of 2014, and the time horizon was defined as 5 years. Market shares were calculated from the 2014 public purchases information and the compared scenarios were the current practice versus an alternative scenario where Rebif® was considered the interferon of choice. RESULTS: Current scenario represents BR1L.288.32 million in first and second line options (Avonex®, Betaseron® or Rebif®). Under model assumptions for market shares, adding peginterferon beta-1a to the MCO formulary would result in a small decrease in MCO costs for patients with relapsing forms of MS.

PND21
CALCULATING THE COSTS OF ADVERSE DRUG REACTIONS FROM POST-MARKETING DATA: IMPLICATIONS FOR OUTCOMES RESEARCH
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OBJECTIVES: Compare patient characteristics and frequency of diagnoses between high-cost and non-high-cost MS patients receiving DMDs.

METHODS: MS patients aged 18–63; 1.MS diagnosis ≥3 yrs; 2.index date (01/01/2012 to 12/31/2012); 3.Total cost ≥$30,000; 4.index date within 2 years before and after claim index date. Continuous enrollment in their US healthcare plan (medical and pharmacy benefit) for ≥1 year before and after index date was required. Eligible patients were categorized as having stable disease (no change in anti-epileptic drug [AED] over 12 months) or uncontrolled disease (defined as AED for ≥6–12 months). Associations were calculated including medications and hospital costs obtained at the DATASUS database. The number of patients was estimated by the number of treatments provided at the year of 2014, and the time horizon was defined as 5 years. Market shares were calculated from the 2014 public purchases information and the compared scenarios were the current practice versus an alternative scenario where Rebif® was considered the interferon of choice. RESULTS: Current scenario represents BR1L.288.32 million in first and second line options (Avonex®, Betaseron® or Rebif®). Under model assumptions for market shares, adding peginterferon beta-1a to the MCO formulary would result in a small decrease in MCO costs for patients with relapsing forms of MS.

CONCLUSIONS: If the model was most sensitive to the acquisition costs of peginterferon beta-1a, the estimated budget decrease was 0.07% of the total annual costs for DMF-treated and relapse treatment costs and a decrease of $0.05 per member per month (PMPM); in 2018, with a treatment share of 7%, the estimated budget decrease was 0.25% of the total annual cost. The estimated decrease of $0.17 per patient per year described that the model was most sensitive to the acquisition costs of peginterferon beta-1a.

CONCLUSIONS: Under model assumptions for market shares, adding peginterferon beta-1a to the MCO formulary would result in a small decrease in MCO costs for patients with relapsing forms of MS.

PND22
AN ASSESSMENT OF FUNDING DIMENSIONS ASSOCIATED WITH HIGH COSTS AMONG PATIENTS WITH MULTIPLE SCLEROSIS: RECEIVING DISEASE-MODIFYING DRUG (DMD) THERAPY
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OBJECTIVES: Compare patient characteristics and frequency of diagnoses between high-cost and non-high-cost MS patients receiving DMDs.

METHODS: MS patients aged 18–63; 1.MS diagnosis ≥3 yrs; 2.index date (01/01/2012 to 12/31/2012); 3.Total cost ≥$30,000; 4.index date within 2 years before and after claim index date. Continuous enrollment in their US healthcare plan (medical and pharmacy benefit) for ≥1 year before and after index date was required. Eligible patients were categorized as having stable disease (no change in anti-epileptic drug [AED] over 12 months) or uncontrolled disease (defined as AED for ≥6–12 months). Associations were calculated including medications and hospital costs obtained at the DATASUS database. The number of patients was estimated by the number of treatments provided at the year of 2014, and the time horizon was defined as 5 years. Market shares were calculated from the 2014 public purchases information and the compared scenarios were the current practice versus an alternative scenario where Rebif® was considered the interferon of choice. RESULTS: Current scenario represents BR1L.288.32 million in first and second line options (Avonex®, Betaseron® or Rebif®). Under model assumptions for market shares, adding peginterferon beta-1a to the MCO formulary would result in a small decrease in MCO costs for patients with relapsing forms of MS.

CONCLUSIONS: If the model was most sensitive to the acquisition costs of peginterferon beta-1a, the estimated budget decrease was 0.07% of the total annual costs for DMF-treated and relapse treatment costs and a decrease of $0.05 per member per month (PMPM); in 2018, with a treatment share of 7%, the estimated budget decrease was 0.25% of the total annual cost. The estimated decrease of $0.17 per patient per year described that the model was most sensitive to the acquisition costs of peginterferon beta-1a.

CONCLUSIONS: Under model assumptions for market shares, adding peginterferon beta-1a to the MCO formulary would result in a small decrease in MCO costs for patients with relapsing forms of MS.

Anomic Burden of Spinal Muscular Atrophy

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OBJECTIVES: To assess the trends in average wholesaler prices at market entry for multiple sclerosis (MS) disease-modifying therapies (DMTs) approved by the US Food and Drug Administration (FDA) in the period 1987-2014.

METHODS: DMTs' regulatory information was derived from the FDA website. Average wholesaler prices (AWP) per unit at market entry data were derived from the RedBook (Truven Health Analytics, Inc.). The AWP history was collected from year of approval to October 2014. The daily defined dosage (DDD) for adult patients was obtained from FDA approved labels. AWP per DDD and the AWP per year were computed. Descriptive statistics and Wilcoxon tests were performed. Statistical significance level was set at 0.05.

RESULTS: The National Multiple Sclerosis Society listed 11 FDA approved DMTs (5 new drug applications [NDA] and 6 biological license applications [BLA]) as of October 2014. Two products were approved by the FDA using priority review. The FDA granted orphan designation to 5 DMTs. Only one DMT had generic competition in the study period. FDA in the 1980s, three in the 1990s and 2000s, respectively, and 4 in the period 2010-2014. The median AWP per DDD was $5.88 in the 1990s, $7.13 in the 1990s, $217.52 in the 2000s, and $274.76 in the period 2010–2014. Statistically significant differences were found in median AWP per DDD prices between NDAs and BLAs. The median AWP per DDD was not significantly different for FDA priority review drugs compared to standard review drugs, and for orphan compared to non-orphan drugs.

CONCLUSIONS: The median AWP per DDD for DMTs at market entry increased substantially over time. No statistically significant differences were found in the median AWP per DDD between priority and standard review drugs, and between orphan and non-orphan drugs.

Withdrawing

OUT OF POCKET COST FOR PEDIATRIC EPILEPSY MANAGEMENT: RESULTS FROM MALAYSIAN POPULATION

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OBJECTIVES: Epilepsy is common chronic disorder characterized by recurrent unprovoked seizures with incidence rate of 20 to 70 per 100,000 population per year. Approximately 150,000 children sustain a first-time unprovoked seizure every year, and of those, 30,000 develop epilepsy. To evaluate the economic burden of pediatric epileptic patients and cost of their epilepsy management from the patients’ perspective. METHODS: This study adopted a prospective cross sectional design by interviewing the patient’s parents from neurology clinic of Hospital Pulau Pinang, Malaysia. A retrospective data (for the past 12 months) was collected from patient's medical record for the laboratory test, investigations and treatment received. The data were also recorded about the patient’s resources utilization, lost productivity, and out of pocket expenditure. RESULTS: Majority of respondent was male which comprise of 64.2% whereby female was 35.8%. Mean (SD) total annual cost from patient perspective was RM 1303.05 ± 2988.66 (USD 366.69±644.06) per patient. The highest item cost which contributes to the total annual cost was the loss of productivity which is RM 528.26 ± 786.22 (USD 148.66±221.25) followed by cost of medication RM 606.30 ± 452.73 (USD 171.73±129.89) followed by cost of transportation of RM 39.51 ± 31.73 (USD 11.22±9.3). CONCLUSIONS: In conclusion, from patients’ perspectives loss of productivity is the major contributor in economic burden to epilepsy management in pediatric. Type of seizure associated with neurological deficit and the response to the medication which affects the number of clinic visit, number of hospitalization and length of hospital admission influence lifetime costs. Enrolment of the patient depending on employment and monthly incomes as well as who is the caretaker and who bring the child to clinic visit and accompanied the child during hospital admission.

ANALYSIS OF MEDICAL COSTS OF RRMS RELAPSES

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OBJECTIVES: No recent study on the medical costs of multiple-sclerosis (MS) has employed real world data to analyze relapsing remitting multiple sclerosis (RRMS) and primary progressive multiple sclerosis (PPMS). This paper analyses the medical costs of RRMS to identify the causes of the high medical costs of MS. METHODS: We selected subjects from among active employees and their families who were covered by private health insurance from MedStat Commercial Data from 2005 to 2012. We developed logic to identify MS patients, MS relapses and RRMS patients and PPMS patients with claims data. The PPPM of RRMS patients was analyzed in cases where relapsing intervals were greater than the average interval length. RESULTS: The PPPM of RRMS patients was $4,964 PPPM. The frequency of RRMS relapses was 3.2 times during 5 years. The PPPM of RRMS patients was reduced by $958 PPPM when relapsing intervals were increased by 1.2 times compared to the usual RRMS relapsing intervals. The PPPM of PPMS patients was reduced by $1,139 PPPM when relapsing intervals were increased by 1.5 times compared to the usual RRMS relapsing intervals. CONCLUSIONS: The number of RRMS patients among MS patients was 67 %. The PPPM of relapses accounted for 83% of PPPM of RRMS. By restricting the frequency of relapses it is possible to reduce the PPPM of RRMS patients.

A RETROSPECTIVE ANALYSIS OF THE ECONOMIC BURDEN AMONG PATIENTS DIAGNOSED WITH CHRONIC MIGRAINE USING THE VETERANS HEALTH ADMINISTRATION MEDICAL DATA

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OBJECTIVES: To evaluate the health care resource utilization and costs among patients diagnosed with chronic migraine (CM) in the Veterans Health Administration (VHA) medical dataset. METHODS: This retrospective cohort was matched to one-to-one propensity score matching (PSM) was used to compare health care costs and utilization between the CM and the comparison cohorts, and was adjusted for baseline demographic and clinical characteristics. Pain scores were also included to investigate wellness after CM diagnosis. RESULTS: After risk-adjustment by PSM, 123,241 patients in each cohort were matched. Significantly more CM patients had inpatient admissions (6.44% vs. 1.75%, p<0.0001) and emergency room (ER, 14.42% vs. 5.50%, p<0.0001), outpatient office (68.80% vs. 42.15%, p<0.0001), outpatient pharmacy (42.91%, p<0.0001) and pharmacy visits (70.84% vs. 41.43%, p<0.0001) compared to those without CM. Accordingly, CM patients also incurred higher costs for inpatient admissions and ER, office, outpatient and pharmacy visits compared with those without CM. Total costs incurred by CM patients were $4,776, almost triple that of