corticosteroid pulse and plasmapheresis may help in acute attacks of NMO. Further well designed, adequately powered studies are required in this context.

PND14
VARIATION IN STATE-LEVEL VS. NATIONAL INCIDENCE IN RARE GENETIC DISEASE: A MONTE CARLO SIMULATION EXPERIMENT WHICH MINIMIZES AS A PRIMARY EXPLANATION IN CONGENITAL ADRENAL HYPERPLASIA
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OBJECTIVES: The cost-effectiveness of CAH screening (a state-level policy) was assessed by Yoo and Groose (2009) using national incidence (NATL). Incidence of rare genetic diseases often varies geographically, however, it is likely that some state variation is due to sampling error. This manuscript assesses the sampling error explanation through a series of simulations. METHODS: We obtained actual state-level incidence (ASI) for the 50 US states plus DC for 2006. For the simulation we assumed that state equaled national incidence and constructed a Beta distribution with alpha parameter equaling predicted state cases, and Beta parameter equaling state births minus predicted cases. We then ran a Monte Carlo simulation of 1000 iterations and calculated the proportion of iterations for which the diastolic blood pressure was more than 2 standard deviations above the mean, with the diastolic blood pressure being the dependent variable.
RESULTS: The average state incidence in the null distribution was 240.2, and the average simulation was 502.1. The average difference was 261.9, and the standard deviation was 92.3. The percentage of cases where the simulated national incidence was less than the null distribution was 59.2%, and the percentage of cases where the simulated national incidence was more than the null distribution was 40.8%. CONCLUSIONS: The national incidence estimate was more extreme than the ASI (i.e. state incidence > national incidence), but there was substantial uncertainty due to sampling error. The results show that state-level incidence estimates should be used with caution in policy making.

PND15
SOCIAL DEMOGRAPHIC CHARACTERISTICS AND DIRECT MEDICAL COSTS FOR PATIENTS WITH PARKINSON’S DISEASE IN KOREA: BIG DATA ANALYSIS FROM THE NATIONAL HEALTH INSURANCE CLAIMS DATABASE
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OBJECTIVES: The primary objective of this study was to estimate the incremental budget impact (IBI) of utilizing perampanel to treat partial-onset seizures (POS) in patients with Parkinson’s disease in Korea. The secondary objective was to analyze the social demographic characteristics and direct medical costs of Parkinson’s disease.
METHODS: This study analyzed the Health Insurance Claims dataset (HIRA-NPS 2013), which is one of the secondary health care claim datasets in Korea. The researchers are directed by the state-level screening policy.
RESULTS: The research is to analyze social demographic characteristics and to measure a direct medical costs of Parkinson’s disease.

PND16
FORECASTING THE PREVALENCE OF STATUS EPILEPTICUS AND ITS SUBTYPES IN EUROPE, 2015–2024
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OBJECTIVES: To estimate the prevalence of status epilepticus (SE), refractory status epilepticus (RSE), and super-refractory status epilepticus (SRSSE) in five major European Union (EU) markets (France, Germany, Italy, Spain, and the United Kingdom) using an incidence-survival model. METHODS: Yearly survival data for each SE etiology (acute symptomatic, progressive symptomatic, remote symptomatic, and idiopathic/cryptogenic) were extracted from published research. Incident cases were calculated for each etiology beginning with 1995, based on market-specific published rates. Applying the survival proportions and incidence estimates to the model for each etiology, we calculated an overall estimate of the prevalence of SE, RSE and SRSSE prevalent cases were assessed as proportions of the total number of prevalent SE cases using published results. RESULTS: We estimated the prevalence of SE to be 18.4 cases per 10,000 population in the SEU, resulting in 590,264 cases in 2015 and increasing to 700,251 cases in 2024. The calculated prevalence ranged from 17.2 cases per 10,000 (Germany) to 19.7 cases per 10,000 (Italy). The prevalence of RSE in the SEU was 4.5 per 10,000, resulting in 145,205 cases in 2015, increasing to 148,572 in 2024. SRSSE prevalence in the SEU was 1.8 per 10,000, resulting in 59,027 cases in 2015, increasing to 60,395 in 2024. CONCLUSIONS: To our knowledge, this is the first attempt to calculate the prevalence of SE and its subtypes for all ages in Europe. Estimating the prevalence of SE, RSE, and SRSSE using population-based epidemiological methods is challenging because of the variability of SE definition, and the unpredictable nature of mortality due to SE. Our incidence-survival model provides an alternative and effective method to assess the prevalent population. Considering the high costs associated with the treatment and hospitalization of SE, RSE, and SRSSE patients, these estimates are necessary to quantify the burden of disease in Europe.

PND17
NEUROLOGICAL DISORDERS – Cost Studies

PND18
BUDGET IMPACT OF PERAMPANEL FOR THE TREATMENT OF PATIENTS WITH PARTIAL-ONSET SEIZURES (POS) IN RUSSIA
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OBJECTIVES: The objective of this study was to estimate the incremental budget impact (IBI) of utilizing perampanel to treat partial-onset seizures (POS) in patients who are 12 years of age and older in Russia. METHODS: The incremental BII was estimated by comparing the cost of POS seizures with and without perampanel. Perampanel is a selective α4β2 nicotinic acetylcholine receptor (nAChR) antagonist and is used to treat partial-onset seizures in adults and children 12 years of age and older with POS. IBI was estimated by comparing the cost of POS seizures with and without perampanel. RESULTS: An estimated 5,084 people with MS received GA 20 mg/ml once-daily in Spain in 2015 (52% of the DMTs) and were assumed to switch to more expensive newly-introduced first-line and second-line DMTs at an annual rate of 8%. Assuming these people received GA 40 mg/ml three times a week instead, and – due to receiving fewer injections – switched at an annual rate of 5%, total expenditure on DMTs and related costs was reduced by between €5.9 million and €7.2 million annually, with savings totalling €3.8 million over five years: a 21% reduction in total expenditure related to DMTs. CONCLUSIONS: Savings were primarily driven by lower acquisition costs of GA compared with other DMTs, and also from lower initiation, administration and monitoring requirements. The incremental BII was estimated by comparing the cost of POS seizures with and without perampanel. Direct (drug, healthcare provider visits, emergency room visits, hospitalizations) and indirect (overall work impairment) costs were included. The model was developed from a societal perspective. The time horizon is five years. Costs are reported in rubles (RUB). RESULTS: An estimated 351,582 patients ages 12 years and older are at risk of new or worsening POS in Russia. Approximately 53% are refractory persistence persistent seizures despite current treatment. The market share uptake of perampanel in POS patients is estimated to be 3%, 5%, 10%, 15% and 20% in years 1 to 5, respectively. In these five years, the adoption of perampanel is projected to increase overall costs by 395M, 510M, 1,023M, 1,573M and 2,055M RUB, respectively.

PND19
COST OFFSETS ASSOCIATED WITH REBF USE IN FIRST-LINE RMS: AN ANALYSIS BASED ON THE COCHRANE COLLABORATION REVIEW AND REAL-WORLD PERSISTENCE DATA
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OBJECTIVES: To project the number and costs of relapses and escalations to second-line therapy for 2 years over a subsurgeonate (SC) interferon beta (IFN)-1a (Rebif®), intramuscular (IM) IFN-1a, IFN-1b, and glatiramer acetate (GA) in the treatment of first-line relapsing-remitting multiple sclerosis (RRMS) from the perspective of the UK National Health Service (NHS). METHODS: A four-state (initial therapy, alternate first-line, second-line and off therapy) Markov model was constructed to simulate a cohort of 1,000 newly-diagnosed RRMS patients. The incremental BI was estimated by comparing the cost of POS seizures with and without perampanel. Direct (drug, healthcare provider visits, emergency room visits, hospitalizations) and indirect (overall work impairment) costs were included. The model was developed from a societal perspective. The time horizon is five years. Costs are reported in rubles (RUB). RESULTS: An estimated 351,582 patients are at risk of new or worsening POS in Russia. Approximately 53% are refractory persistence persistent seizures despite current treatment. The market share uptake of perampanel in POS patients is estimated to be 3%, 5%, 10%, 15% and 20% in years 1 to 5, respectively. In these five years, the adoption of perampanel is projected to increase total costs by 395M, 510M, 1,023M, 1,573M and 2,055M RUB, respectively. Due to the budget impact of perampanel, 27% of the drug cost increase (5,428M RUB) over 5 years is offset by the lower utilization of direct medical resources (RUB 255M) and lower overall work impairment (RUB 1,319M), resulting in an overall BI of 25% over 5 years. CONCLUSIONS: With a budget impact of only 25% over a period of 5 years and demonstrated efficacy benefits in refractory POS patients (63% median reduction in second-line generally severe relapses and 13% seizure freedom rate), per- ampanel should be considered a valuable treatment.

PND20
COST OFFSETS ASSOCIATED WITH REBF USE IN FIRST-LINE RMS: AN ANALYSIS BASED ON THE COCHRANE COLLABORATION REVIEW AND REAL-WORLD PERSISTENCE DATA
Wright F1, Fujii F1, Beckerman B1
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OBJECTIVES: To project the number and costs of relapses and escalations to second-line therapy for 2 years over a subsurgeonate (SC) interferon beta (IFN)-1a (Rebif®), intramuscular (IM) IFN-1a, IFN-1b, and glatiramer acetate (GA) in the treatment of first-line relapsing-remitting multiple sclerosis (RRMS) from the perspective of the UK National Health Service (NHS). METHODS: A four-state (initial therapy, alternate first-line, second-line and off therapy) Markov model was constructed to simulate a cohort of 1,000 newly-diagnosed RRMS patients. The incremental BI was estimated by comparing the cost of POS seizures with and without perampanel. Direct (drug, healthcare provider visits, emergency room visits, hospitalizations) and indirect (overall work impairment) costs were included. The model was developed from a societal perspective. The time horizon is five years. Costs are reported in rubles (RUB). RESULTS: An estimated 351,582 patients are at risk of new or worsening POS in Russia. Approximately 53% are refractory persisten
SC IFN-β 1a is projected to avoid 28, 10, and 10 additional escalations to second-line therapy compared with IM IFN-β 1a, IM IFN-β 1b, and GA, respectively, resulting in cost savings of €3,705, €1,498, and €1,021, respectively. The cost of standard care was calculated on the basis of Annals of Internal Medicine. The analysis was conducted with a three-year time horizon with the following assumptions: the introduction of PEGIFN beta-1a for the treatment of RRMS is economically sustainable by the Italian NHS. A one-way sensitivity analysis was developed. RESULTS: According to current price and reimbursement conditions established by the Italian NHS, the introduction of PEGIFN-β 1a will result in cost savings. This model found that PEGIFN-β 1a would be first-line or related multiple sclerosis (RRMS) patients an estimated annual costs of €319,200,000, €336,100,000, and €353,600,000 in Year 1, 2, and 3, respectively compared to the costs of the current scenario of €391,200,000, €337,200,000, and €355,200,000 in Year 1, 2, and 3, respectively. The cumulative budget reduction over the three-year period was €1,000,000 (an approximate 0.3% savings). CONCLUSIONS: The adoption of PEGIFN-β 1a for the treatment of RRMS is economically sustainable by the Italian NHS.

PN24
THE BUDGET IMPACT ANALYSIS OF ADJUNCTIVE THERAPY FOR PATIENTS WITH PARTIAL EPILEPSY
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BACKGROUND: Epileptic seizures are associated with significantly impaired quality of life, excessive healthcare resource use and thus high costs. According to published sources based on clinical data new anti-epileptic add-on therapy options for refractory patients with partial-onset seizures with or without secondary generalisation, such as lacosamide and perampanel, has achieved greater efficacy by responder rates (better control of the seizures) and seizure freedom than placebo being equally effective between each other. OBJECTIVES: to estimate the budgetary impact of the introduction of 2 types of adjunctive treatment in adult patients with refractory partial epilepsy (RPE) - lacosamide and perampanel added to standard treatment, and to forecast this impact over the following three years in Kaliningrad region of Russian Federation. METHODS: The budget impact model has been developed for the Russian Federation regions. Efficacy data used to assess the resource consumption was taken from randomized clinical trials and meta-analysis. The demographic parameters and the partial epilepsy incidence were calculated based on the official statistic surveillance system data for the regions. Resource use was estimated by expert survey. Drug and other medical costs were calculated on the basis of registered vital and essential drug list prices and regional tariffs. RESULTS: Introduction of lacosamide to clinical practice (as add-on anti-epileptic treatment) compared to placebo or perampanel with equal market shares of 10%, 20% and 30% leads to average budget savings of healthcare system in Kaliningrad region, which amounted to €27,081,510 in the first year, €43,746,318 in the second year, €78,119,000 in the third year, for treating 131,140 and 149 patients with RPE, respectively. CONCLUSIONS: The analysis showed that introduction of adjunctive therapy with lacosamide in the market for treatment of patients with RPE compared to perampanel could save budget funds by reducing drug costs in Russian Federation regions.

PN25
BUDGET IMPACT ANALYSIS OF PRAMIPEXOLE EXTENDED RELEASE MONOTHERAPY IN EARLY PARKINSON’S DISEASE
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OBJECTIVES: The objectives of this study were to assess the cost-effectiveness of pramipexole extended release monotherapy in early Parkinson’s disease (PD) compared to levodopa monotherapy in a real-world setting. METHODS: A budget impact analysis (BIA) model was used to simulate the costs of a hypothetical cohort of 100 patients with early PD to determine the potential budgetary impact of pramipexole extended release monotherapy in a real-world setting. The costs of the model were estimated based on Russian published literature, clinical trials, administrative data, and expert opinion. RESULTS: The BIA model estimated that pramipexole extended release monotherapy would result in a savings of €28,000 compared to levodopa monotherapy in the management of early PD in a real-world setting. CONCLUSIONS: Pramipexole extended release monotherapy appears to be a cost-saving treatment option in the management of early PD in the Russian Federation compared to levodopa monotherapy.