A MARKOV MODEL BASED ON LONG-TERM CLINICAL DATA
COST-EFFECTIVENESS OF DIFFERENT INTERFERON-BETA THERAPIES FOR
than treatment with rectal diazepam. The need for ambulance call outs and hospital stays, and is more socially acceptable
objectives: Current care in Italy for first-line treatment of seizures consists of rectal diazepam with some use of intravenous treatments (diazepam, midazolam and lorazepam) in a hospital setting. In the community there can be reluctance to administer rectal diazepam due to dignity and social acceptability issues. BUCCOLAM (oromucosal midazolam), the first product to receive a Paediatric Use Marketing Authorisation (PUMA), is approved for the treatment of prolonged, acute, convulsive seizures (PACS) in children and may be used by parents and other caregivers. A decision-tree model was developed to assess the cost-effectiveness of BUCCOLAM compared to rectal diazepam for the treatment of (PACS) initially occurring in the community setting. 

Methods: The model allows for different routes though the treatment pathway that include whether or not 1) a carer administers treatment, 2) an ambulance is required and patients are taken to hospital, and 3) inpatient stay is required. Clinical effectiveness data were obtained from McIntyre et al (2000) and a Delphi panel. Costs were taken from published sources. The price proposed for BUCCOLAM reimbursement to the Italian National Health Service is used. Rectal diazepam is not reimbursable therefore its cost is not included. Estimates of the number of seizures per year where BUCCOLAM might be used were taken from published sources: 

Results: Over one year, compared to rectal diazepam, BUCCOLAM showed a reduction in per patient costs of €1,467. The largest saving came from an estimated reduction in inpatient costs of €919 per patient per year. Patients treated with BUCCOLAM also had a higher health related quality of life than those treated with rectal diazepam, treatment with BUCCOLAM is therefore recommended.

Conclusions: Treatment with BUCCOLAM is cost saving, through a reduction in the need for ambulance call outs and hospital stays, and is more socially acceptable than treatment with rectal diazepam.

PND36
COST-EFFECTIVENESS OF DIFFERENT INTERFERON-BETA THERAPIES FOR
RELAPSING-REMITTING AND SECONDARY PROGRESSIVE MULTIPLE SCLEROSIS: A MARKOV MODEL BASED ON LONG-TERM CLINICAL DATA

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Objectives: To evaluate the economic outcomes of three kind of interferon-beta comparing to placebo: IM IFN-β1-a, SC IFN-β1-a, or SC IFN-β1-b in patients diagnosed with Multiple Sclerosis (MS) at a 2-years horizon. A Markov model was developed to assess the cost-effectiveness of three interferon-betas with placebo for managing a hypothetical cohort of patients diagnosed with RRMS in Iran. Health states were based on the Kurtzke Expanded Disability Status Scale (EDSS), a widely accepted scale for assessing Multiple sclerosis. Disease progression transition probabilities for symptom management were obtained from natural history studies. Treatment effects of the interferon-beta therapies were taken from related multicenter randomized controlled trials and their long term follow up for RRMS and Secondary progressive Multiple Sclerosis (SPMS). Transition probabilities were adjusted to account for treatment discontinuation, age and sex adjusted death rate. Transitions among health states occurred in 2-years cycles for fifteen cycles. Only medical direct cost has been considered for evaluation. 

Results: The incremental cost per quality-adjusted life-year for IM IFN-β1-a, SC IFN-β1-a, or SC IFN-β1-b compared with placebo. The incremental cost per prevention of utility loss due to relapses is €44912, €117455, €185907, for IM IFN-β1-a, SC IFN-β1-a, or SC IFN-β1-b compared with placebo. Conclusions: The Markov pharmacoeconomics model determined that SC IFN-β1-a was the best strategy of the 3 interferon-beta therapies used to manage MS in relapse, however none of these medicines were cost-effective considering progression of disease and utilities or avoiding utility loss due to relapses.

PND37
THE COST-EFFECTIVENESS OF BUCCOLAM® (LICENSED OROMUCOSAL MIDAZOLAM) FOR THE TREATMENT OF ACUTE EPILEPTIC SEIZURES IN THE UK: A HYBRID MODEL SOLUTION

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Objectives: In the UK, two treatment options are used for acute epileptic seizures in the community – rectal diazepam (RD) and unlicensed oromucosal midazolam (UOM). In practice the former is rarely used, with UOM being widely recommended by physicians and prescribed unlicensed. In September 2011, Buccolam (licensed oromucosal midazolam) became the first product to receive a paediatric use marketing authorisation (PUMA) and is indicated for the treatment of acute convulsive seizures in children (3 months to ~ 18 years). To support the successful submission to the Scottish Medicines Consortium, a model was constructed assessing the cost-effectiveness of Buccolam for such seizures initially occurring in the community setting. 

Methods: A hybrid model was developed, including a time-to-event simulation for the frequency and location of occurrence of seizures along with a decision tree model that assessed the treatment pathway when a child has a seizure. The model was informed by data from a variety of sources including clinical effectiveness estimates from McIntyre et al. 2005 and costs based on published Scottish data where possible. To determine current practice, a Delphi panel, hospital audit and survey of parents of children with epilepsy were conducted. 

A 6-year time horizon was used in the base case. The associated cost and health-related quality of life (HRQL) impacts were calculated using Markov models, and analyses were conducted to assess the robustness of the model. 

Results: Buccolam showed a reduction in costs when compared to UOM or RD: £2,046 and £8,516, respectively. It also improved HRQOL showing an increase of 0.005 and 0.036 quality adjusted life years, respectively. Buccolam remained dominant across a range of scenario analyses.

Conclusions: Costs associated with treatment with Buccolam compared to RD are driven by a reduction in the need for ambulance call-outs and hospital stays and, compared to UOM, through reduced drug costs and wastage.

PND38
COST MINIMIZATION ANALYSIS OF FINGOLIMOD VERSUS NATALIZUMAB IN THE SECOND-LINE TREATMENT OF REMITTENT-RECURRENT MULTIPLE SCLEROSIS

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Objectives: To carry out a cost-minimization analysis of Fingolimod compared to Natalizumab in the second-line treatment of Remittent-Recurrent Multiple Sclerosis (RRMS) in Spain. 

Methods: Based on the indirect comparisons of Del Saino 2011 and Zintzaras 2012, where no significant differences between Fingolimod and Natalizumab were observed, a cost-minimization analysis was developed for a 2-years horizon. The relapse rate (RR) applied was the same for both treatment arms and resource use associated to Spanish costs (€2012) was modelled. The analysis was conducted from the National Health System (NHS) perspective and a 3 % annual discount rate was applied to future costs. Sensitivity analysis was performed in order to validate the robustness of the model. 

Results: The indirect comparison of Fingolimod with Natalizumab recorded a Confidence Interval of the hazard ratio between 0.82 and 1.07 (p-value: NS). The pharmacological cost for a 2-years horizon was 41,107€ for Fingolimod and 42,053€ for Natalizumab. The minimum cost saving derived from Fingolimod prescription was of 876€, after applying a 7.5% discount. Considering an annual mean RR of 0.22 a 43,991€ direct medical cost was saved for Fingolimod and a 49,164€ cost for Natalizumab. Depending on the sensitivity analysis scenarios Fingolimod generated savings of 3.2%-11%. 

Conclusions: Fingolimod is an effective second-line treatment option of RRMS compared to Natalizumab, generating savings to the NHS.

PND39
COST-UTILITY ANALYSIS OF A THERAPEUTIC EDUCATION PROGRAM IN PARKINSON DISEASE VERSUS TRADITIONAL CARE

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Objectives: Parkinson disease (PD) is a chronic progressive disorder that causes significant disability and reduces quality of life. In Europe the prevalence of PD is 160/100 000 among those aged 65 and older, and annual direct cost associated to this disease ranging from 5163€ to 9975€ per patient. 

No cure is available to stop the disease, and an American study shows that a patient education program reduced disease progression, improved health confidence, reduced medication and decreases professional visits. The aim of this study is to assess the cost-utility of a therapeutic education program vs. traditional care in PD patients. 

Methods: A total of 156 patients of both sexes, under medication and meeting the criteria of the UK Parkinson’s Disease Society were recruited from two neurology departments in University Hospital of Toulouse between 2008 and 2010. The primary outcome measure was the incremental cost-utility ratio of therapeutic education program vs. traditional care. 

Baseline characteristics, between both groups, were compared using student t test for continuous variables and Chi-square test for discrete variables. The ethical committee of the University Hospital of Toulouse approved the study. 

Results: Forty-five patients were excluded because they were not found on social health insurance database. Costs and utility were adjusted on age, sex and disease duration. Annual adjusted cost per patient was respectively 6633, 346€ (sd = 1250.15) in 34 patients and 6941, 17€ (sd = 1125.51) in 41 patients for traditional care group and therapeutic education program group (P=0.86). Adjusted difference of utility was -0.020 (sd = 0.019) and 0.019 (sd = 0.017) for traditional care group and therapeutic education program group respectively (p=0.14). Incremental cost-utility adjusted ratio was 7880.25€/QALY. 

Conclusions: Therapeutic education program for Parkinson disease patients is cost-effective. Nevertheless, these results should be confirmed with multicenter prospective studies assessing medical and economic consequences of these strategies.