Adjusted Life Years (QALYs) was 1.48 and 1.42 respectively, or $1.02 mill. per additional QALY (all values discounted at 3%). This amount would be $199,000 if patients used apomorphine as conventional therapy, $124.00 if EQ-5D were used to measure HRQOL, $99,000 if indirect costs were included. If Duodopa improves disease severity by one H&Y stage, the therapy will be cost-saving. **CONCLUSIONS:** The cost-effectiveness of Duodopa depends in particular on the cost of alternative therapies (i.e. apomorphine and oral drugs) and the extent to which Duodopa postpones PD progression. Also, the method for capturing quality-of-life has a considerable impact on the cost-effectiveness ratio. The study indicates that variability in utility scores may be much greater than previously anticipated.

PNL19

META-ANALYSIS OF CASE SERIES TO PROVIDE INPUTS FOR A DISCRETE EVENT SIMULATION OF DEEP BRAIN STIMULATION FOR THE TREATMENT OF PARKINSON'S DISEASE

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OBJECTIVE: To estimate for use in economic modeling, the time-dependent effects of deep brain stimulation (DBS) in patients with Parkinson's Disease (PD) using meta-analysis of case series. **METHODS:** A discrete event simulation of the course of advanced PD was created. It requires time-dependent functions of the effects of DBS. To obtain these, we searched the PUBMED, OVID and the Science Citation Index databases between 1980 and 2004 for papers reporting longitudinal experience with DBS. Data were extracted by three expert reviewers. The effect of DBS was measured at various time-points relative to baseline, while on and off medication. Time-dependent growth curves were developed by fitting the estimates as functions of time under fixed and random-effects models. **RESULTS:** Comparisons to baseline in the 85 studies retained showed that while off medication, activating the stimulator improved ADL rapidly (by 50.0% at 3 months) but then improvement declined slowly following a quadratic polynomial. The effect was much weaker and decline linearly while on medication but levodopa dose declined steadily, from a reduction of 590.52 (439.9–741.2) mg at 3 months to 633.8 (497.4–770.2) mg after 1 year. Motor skills improved by 47.2% and then more slowly following a fractional polynomial curve. **CONCLUSION:** These growth curves will be used to estimate the course of individual patients in simulation providing much more accurate reflection of the actual effects than traditional point estimates or transition probabilities. Given that studies can be either too small or too limited in scope to provide sound estimates of the effect of treatment, the results of meta-analytic curve fitting can be used as precise inputs to build an economic model.

PNL20

DISEASE SEVERITY AND HEALTH CARE COSTS OF RELAPSING-REMITTING MULTIPLE SCLEROSIS IN PORTUGAL

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OBJECTIVES: To measure the average health care cost per patient with relapsing remitting multiple sclerosis (RRMS) by level of severity in Portugal. Additionally, and in contrast to previous studies, the health care cost of a relapse by severity level is also calculated. **METHODS:** The study adopts the perspective of the National Health Service (NHS) and carries out a cost of treatment analysis. Information on treatment profiles and resource use was gathered through a modified Delphi Panel involving eight specialist physicians from different hospitals throughout the country. Each completed a questionnaire based on four clinical cases representing categories of the Expanded Disability Severity Scale (EDSS). Information was collected on the use of inpatient care, pharmaceuticals, ambulatory visits, and various other resources. These were valued using national information on unit costs from a variety of sources. **RESULTS:** Total health care costs per patient, in 2003, were estimated to range from €11,515 (EDSS ≤ 3) to €22,876 (EDSS ≥ 6.5). At each level of severity the cost of treatment rises with the most significant increase occurring between EDSS ≤ 3 and 3.5 ≤ EDSS ≥ 4.5. The highest expenditures are associated with the use of interferons (between 44% and 82% of the total costs). When patients have a relapse, health care costs vary between €3412 (EDSS ≤ 3) and €6718 (EDSS ≥ 6.5). At intermediate EDSS levels the costs of a relapse are €4422 for 3.5 ≤ EDSS ≥ 4.5 and €6495 for 5 ≤ EDSS ≥ 6. The most significant cost component for relapses is that related to inpatient stays. **CONCLUSIONS:** Though the number of persons with MS in Portugal is small (estimates suggest around 5000 patients), the costs to the health system are very large. Therapeutic strategies that reduce the impact of the disease (e.g. relapse avoidance) can bring about significant cost-savings. The results may be used as input to cost-effectiveness analyses and more widely in health care planning and policy.

PNL21

THE COST OF MULTIPLE SCLEROSIS (MS) IN EUROPE

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OBJECTIVES: During the last decade, the introduction of new disease-modifying drugs (DMDs) for MS gave rise to a number of studies on the economic burden of the disease and the cost-effectiveness of different treatment options. Since these surveys were conducted before DMDs were established as part of standard treatment regimens, there is a need for up-to-date cost-of-illness studies that can be used for the economic evaluation of new treatments. Therefore, European Health Economics has conducted a European-wide, cross-sectional bottom-up survey on the costs of MS, involving at least nine countries. **METHODS:** The study used a standardised mailed questionnaire providing data on demographics, direct medical and non-medical costs, informal care needs, productivity losses, relapses, utility and fatigue. **RESULTS:** The results were analysed by country, both for the whole sample and by level of disease severity measured with the Expanded Disability Status Scale (EDSS). Patients were recruited by MS clinics and MS societies, and the response rate ranged between 35% and 72%. Overall, the study includes over 10,000 patients. The samples per country are thus sufficiently large to analyse the change in costs and utility for all levels of disease severity. For example, in Sweden, the total annual cost per MS patient was estimated at €53,580, with costs increasing sevenfold for patients with severe disease compared to patients with no or very mild disability, from €16,338 to €116,502. DMDs were used by 43% of patients and accounted for 11% of total costs. In addition, analysis of variations across countries illustrates the impact of different health care and economic systems on patient management, total costs and distribution of resources. For example, services represented 29% of total costs in Sweden, due to a unique extensive home service available to severe patients. **CONCLUSIONS:** This alternative to institutionalisation reduces nursing home costs and informal care needs.