individual born in 2005 returns a lifetime positive NPV to the government of £160,069 with a break-even point (ie. where the NPV becomes positive) at age 31. A child with similar characteristics, but conceived using IVF, has a lifetime NPV of £144,000 with a break-even point at age 33. Sensitivity analysis indicated that these results are sensitive to assumptions about the working age interval, inflation rate, discount rate, and increasing age related health costs. **CONCLUSION:** Despite modelling limitations, we conclude that under reasonable assumptions IVF costs are relatively insignificant vis-à-vis other costs and benefits to government. While the model does not forecast the full economic benefits associated with investment in IVF, it does demonstrate the potential long-term financial returns of improved access to IVF services.

ES8

COST-EFFECTIVENESS OF DARUNAVIR/R IN HIGHLY TREATMENT-EXPERIENCED HIV/AIDS PATIENTS IN DIFFERENT EUROPEAN HEALTH CARE SETTINGS

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OBJECTIVES: To determine whether the protease inhibitor (PI) darunavir boosted with low dose ritonavir (DRV/r) is cost-effective, compared to currently available PIs, as part of highly active anti-retroviral therapies (HAART), in highly pre-treated HIV-1-infected adults who failed >1 PI-containing regimen in European healthcare settings. This analysis included Belgium, Italy and Sweden and focused on the payer perspective. **METHODS:** A Markov model was adapted which contains 6 health states defined by CD4+ T-cell-count range (<50, 51–100, 101–200, 201–350, 351–500 and >500 cells/mm^3) and a state "death" (Mauskopf et al, 2006). Clinical trial (POWER1&2) data were used to model the composition of HAART regimens, patient characteristics and transition probabilities during DRV/r or comparator PI(/r) treatment, both combined with optimised background regimen (OBR). After treatment failure, patients were assumed to switch to tipranavir/r-containing regimens ((TPV/r)+OBR). Transition probabilities during TPV/r treatment were obtained from published clinical trials. Utility values and HIV-related mortality were obtained from published literature. Published relative risks of non-HIV mortality in HIV patients were applied to country-specific all-cause mortality statistics. Non-HAART-related costs in each model state were derived from observational studies in each country. Costs and effects were discounted according to local guidelines. The quality-adjusted lifetime incremental cost-effectiveness ratio (ICER) was calculated for the base-case. Univariate and probabilistic sensitivity analyses were applied. **RESULTS:** For Sweden, Italy and Belgium respectively, quality-adjusted life year (QALY) gains of 1.142, 1.171 and 1.397 were predicted for patients treated with DRV/r in the base-case analysis. The base-case ICER for DRV/r was 12,211€/QALY, 16,668€/QALY and 12,584€/QALY respectively. The DRV/r ICER remained consistently below the often quoted threshold of 30,000€/QALY throughout extensive sensitivity analyses. The probability of an ICER below 30,000€/QALY was above 92% in all countries. **CONCLUSION:** DRV/r is predicted to be cost-effective versus currently available PIs in highly pre-treated HIV-1-infected adults in different European health care settings.

PODIUM SESSION IV: ECONOMICS OF NEUROLOGICAL DISEASE

ND1

COST-EFFECTIVENESS OF INTRATHECAL BACLOFEN THERAPY VERSUS CURRENT THERAPIES IN DISABLED SPASTICITY

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OBJECTIVES: To assess the cost-effectiveness of Intrathecal Baclofen Therapy (ITB) versus current therapies in low level disabled spasticity. **METHODS:** Two simulation models have been constructed to assess the effectiveness, cost and cost-effectiveness of various treatment sequences based on current medical practices established by an international expert panel. The first model simulates current therapies using various sequences of physical treatment only, oral treatments, focal spasticity treatments, neuro-surgery and nursing. The second model simulates strategies starting with ITB as the first line treatment, then various sequences of 2d, 3rd or 4th lines treatments including ITB dose adjustment, explantation, oral treatments, focal spasticity treatments, neurosurgery or nursing. The model used a simulation decision framework and a 2-year time horizon over four 6 months intervals. A successful treatment has been defined as a patient or caregiver satisfaction + change of 1 point in the Ashworth score. Direct medical costs have been collected in the frame of the French health care system. Effectiveness and cost parameters have been included in the model according to specific distribution shapes in order to take into account medical practices variability. Probabilistic sensitivity analyses were conducted using 5000 Monte-Carlo simulations taking into account specific distribution shapes for each cost and effectiveness parameters. **RESULTS:** ITB as first line strategy is the dominant strategy over 2 years, providing greater treatment success rate (78.7% versus 59.3%, $p < 0.001$), lower costs (59,391 Euros versus 88,272 Euros, $p < 0.001$) and lower cost-effectiveness (75,204 Euros/success versus 148,822 Euros/success, $p < 0.001$) than current strategies. **CONCLUSION:** This robust cost-effectiveness modeling is the first study assessing the cost-effectiveness of various treatment sequences in disabled spasticity according to current medical practices. This study establishes that introducing ITB as the first line therapy is a dominant strategy (more effective and less costly) over a time period of 2 years.

ND2

MODELING THE COST-EFFECTIVENESS OF A NEW TREATMENT FOR MS (NATALIZUMAB) COMPARED TO CURRENT STANDARD PRACTICE IN SWEDEN

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OBJECTIVES: To estimate the cost-effectiveness of a new treatment (natalizumab) for multiple sclerosis (MS) compared to current standard therapy with disease-modifying drugs (DMDs) in Sweden. **METHODS:** A Markov model was constructed to illustrate disease progression based on functional disability (EDSS). Disease progression while on treatment with natalizumab was based on a two-year placebo-controlled clinical trial in 942 patients (AFFIRM). Progression while on treatment with current DMDs was estimated from a matched sample of 512