response in part II and III (p = 0.0078 and p = 0.0072, respectively). a trend to better results for the LCE group was observed in part I and IV. **CONCLUSIONS:** Levodopa/carbidopa/entacapone shows a significant better patient and physician global perception in the LCE treatment group vs. LC group in PD patients with early WO and ADLs deterioration.

PND38
DIFFICULTIES IN IDENTIFYING THE ORIGINAL SOURCE QUESTIONNAIRE FOR USE IN TRANSLATIONS: THE ADAS-COG CASE STUDY

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OBJECTIVES: Since its development in the 80's, variations of the Alzheimer's Disease Assessment Scale-Cognitive subscale (ADAS-Cog), a Clinician-Reported Outcome (ClinRO) measure, have been used to monitor disease progression and treatment efficacy in Alzheimer's disease. The objective of this study was to identify all versions used as a basis for translation in Mapi Institute projects and to take stock of existing translations. **METHODS:** The review was based on all ADAS-Cog translation projects performed by Mapi Institute. **RESULTS:** Sixteen projects were identified representing a total of 70 languages and 219 translations. Translations were based on 11 source versions which differed in terms of content (number of items, order of items and instructions), and format. The number of items ranged from 11 to 15. Four studies used 13 items, but only in two cases the same items were used although in a different order. Four studies used 12 items: only two studies used the same items (with a different list of words for the Word Recognition Task), but again in a different order. Format and instructions differed in all cases. In most projects the source version provided by the sponsor was a single document mixing instructions with the rater and response forms. Only in 3 cases the original consisted in a separate instruction manual and response forms. With regard to available translations, more than one translation was identified in 56 of the 70 available languages and in one language (Swedish) as many as 7 translations. **CONCLUSIONS:** The abundance of different versions of the same questionnaire both in its original US English form as in translations makes comparisons between studies or pooling of data difficult for both researchers and users. In the light of FDA's recent PRO guidance it would be beneficial to demand the same scientific rigor when using ClinROs in international studies.

PND39
RESPONSIVENESS OF THE MULTIPLE SCLEROSIS INTERNATIONAL QUALITY OF LIFE QUESTIONNAIRE TO EXPANDED DISABILITY STATUS SCALE SCORE CHANGES IN PATIENTS WITH MULTIPLE SCLEROSIS: MONTH 12 RESULTS FROM AN INTERNATIONAL OBSERVATIONAL STUDY

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OBJECTIVES: Quality of life (QoL) is an important measure that is often overlooked in the assessment of multiple sclerosis (MS). The MS International QoL (MusiQoL) questionnaire is a validated, MS-specific instrument. This study aimed to assess the responsiveness of the MusiQoL questionnaire to changes in Expanded Disability Status Scale (EDSS) scores in patients with MS. **METHODS:** In this ongoing, 24-month, multicentre, observational study, MusiQoL and EDSS scores were recorded at baseline (BL) and at 6-month intervals. The primary endpoint is change in MusiQoL index score from BL to month 24 (including effect size). Secondary endpoints include change in MusiQoL index score from BL to month 12 and change in MusiQoL scale scores. **RESULTS:** Of 600 patients enrolled, 474 had evaluable BL and month-12 EDSS and MusiQoL index data. At BL, mean (SD) EDSS score was 2.9 (1.9); mean (SD) MusiQoL index score was 68.5 (14.4); and mean (SD) MusiQoL scale scores ranged from 59.9 (24.8) to 85.4 (18.5). At month 12, 68 patients (14.3%) had a worse EDSS score than that recorded at BL. Mean (SD) change in MusiQoL index score was 0.48 (10.99) overall, and −1.00 (9.88) in "worsened" patients; effect sizes were 0.03 and −0.08, respectively. Changes from BL to month 12 in MusiQoL scale scores were mostly small. However, there were larger (mean [SD]) decreases in some subscales at month 12 for "worsened" patients: "Activities-of-daily-living" (−4.20 [18.07]); "Relationship-with-family" (−5.14 [23.43]); 'Sentimental-and-sexual-life' (−4.11 [17.56]); and 'Relationship-with-health care-system' (−3.56 [14.11]). Effect sizes were −0.17, −0.25, −0.14 and −0.21 respectively. Conversely, the mean (SD) change in 'Symptoms' score was 5.36 (17.27) at month 12 for 'worsened' patients (effect size: 0.24). **CONCLUSIONS:** As expected, most MusiQoL scores decreased over 12 months in patients with worsening EDSS scores, indicating poorer QoL and confirming the utility of the MS-specific MusiQoL in rating QoL.

PND40
QUALITY OF LIFE OF CAREGIVERS IN HUNTINGTON'S DISEASE—FIRST RESULTS FROM EURO-HDB STUDY

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OBJECTIVES: Huntington's disease (HD) is a rare neurodegenerative disease leading to sustained disability for patients and poor quality of life (QoL) for patients as well as caregivers. This study investigated the impact of HD on caregivers' QoL and its drivers. **METHODS:** The European HD burden study (Euro-HDB) is an ongoing cross-sectional survey among HR patients and their caregivers in six countries (France, Italy, Germany, UK, Sweden and Spain). The Huntington's disease Quality of Life Battery for Carers (HDQoL-C) short-version, a previously validated questionnaire by Aubeeluck A. and Buchanan H., was administered. Pearson correlations with generic HR-QOL (SF36, EQ5D) and the specific HR-QOL in HD for patients (HQOLI) were evaluated. The determinants of caregiver QOL among drivers among patients' clinical characteristics (voluntary movement disorders, chorea, depression/anxiety, psychotic disorder, cognition, temper) were studied by regression analysis adjusting on age, sex and occupational categories. The relationship between QOL of patients and caregivers were also explored. **RESULTS:** To date, 201 caregivers in France and 124 in Italy have been enrolled. For France (respectively Italy) 6% (12%) were completely unsatisfied by their overall QOL and 7% (5%) were totally satisfied. HDQoL-C scores were poorly correlated with generic caregiver HR-QOL: correlation equaled 0.31 for EQ5D utility and varied between 0.04 and 0.45 for the eight domains of SF36. Correlation was quite high (0.59; *P* < 0.01) between HDQoL-C and HQOLI. Drivers of caregiver's QoL were voluntary movement disorders (p = 0.049), depression/anxiety (p = 0.02), psychotic disorder (p = 0.01) and cognition (p = 0.01). Temper and chorea were not drivers of caregivers' QOL independently of other clinical characteristics. **CONCLUSIONS:** Caregivers QOL worsens as the patient clinical characteristics deteriorate especially voluntary movement disorders, depression/anxiety, psychotic disorders and cognition disorders. Patients and caregiver QoL was indirectly correlated via patient clinical scores. The potential impact on caregiver QOL should be considered in evaluations of innovative HD treatments.

PND41
THE IMPACT OF PAIN SEVERITY AND FREQUENCY ON HRQOL IN THE BIG 5 EUROPEAN UNION COUNTRIES

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OBJECTIVES: This study assesses, for an estimated EU pain population of 50 million patients, the impact of pain severity and frequency on three dimensions of health related quality of life (HRQoL): the SF-12 MCS and PCS scores and (ii) the SF-6D absolute utility scores. **METHODS:** The study is based on data from the internet based 2008 National Health and Wellness Survey undertaken in the UK, France, Spain, Germany and Italy. This study identified 11,000 respondents (1 in 5 of the estimated big 5 EU countries) who had experienced pain in the last month. The assessment of the quantitative impact of pain status on HRQoL is estimated via three single equation generalized linear (ordinary least squares) models which estimate the impact of pain on PCS, MCS and utility scores. The model includes a range of variables which have been shown in previous population studies to impact HRQoL. These include: socio-demographic factors, health risk behaviors, comorbidity status, medication utilization, duration of medication utilization and satisfaction with care. The experience of pain is captured by a combination of severity and frequency categorical variables. **RESULTS:** Pain has a substantial impact on all three of the dimensions of HRQoL considered here. Compared to the reference category (mild pain experienced weekly or less) the presence of severe, daily pain has a substantial impact on SF-12 PCS scores (−13.85 points); SF-12 MCS scores (−4.72); and SF-6D utilities (−0.147). There is a marked gradient on scores by severity and frequency of pain experience. The impact of pain on HRQoL is more significant than the impact of socio-demographic characteristics, health risk factors, comorbidities and the experience of pain medication. **CONCLUSIONS:** The presence of moderate and severe pain imposes a significant burden on persons reporting pain in the big 5 EU countries; the burden increases the greater the frequency and severity.

PND42
THE RELATIONSHIP BETWEEN SOME INDICATORS INFLUENCING THE QUALITY OF LIFE OF PEOPLE WITH DOWN'S SYNDROME LOOKED AFTER IN THE FAMILY AND PARENTAL QUALIFICATION IN CONNECTION WITH A STUDY CARRIED OUT IN HUNGARY

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OBJECTIVES: The aim of the study was to survey some objective and subjective indicators determining the quality of life of people with Down's syndrome (DS), born between 1975 and 2005, looked after in their families in the Southern-Transdanubian region of Hungary. The relationship between the parental level of education and the above factors was explored. **METHODS:** On the basis of the VRONY database (National Registry of Congenital Anomalies) health visitors contacted families looking after DS people (N = 107), and conducted anonymous, questionnaire surveys in 2008–2009. Reading was examined from school-age (N = 79), drawing and writing was examined depending on age. **RESULTS:** The abilities under examination moved

on a wide range. The increase of the mother's educational level is in significantly positive relationship with the DS person's computing (khi2 = 14,314, p = 0,026), drawing/writing (khi2 = 21,027, p = 0,002) and reading (khi2 = 22,169, p = 0.001) performance. It has a favourable effect on the development of the basic self-supporting skills (khi2 = 25,571, $P < 0.001$), and the DS person's social connections. The majority of those lacking friends live with mothers with the lowest qualification (khi2 = 9.799, p = 0.02). The level of happiness was measured on a four-grade scale. Owing to a mental retardation of medium gravity, surveying was carried out in an indirect way, by questioning the parents. The higher parental qualifications associated with happier DS people (khi2 = 17,344, p = 0.008). The parents' educational levels are correlated (r = 0.609, $P < 0.001$). **CONCLUSIONS:** More qualified parents provide supportive environment rich in stimuli. Higher level of development reduces the DS person's dependence on others, increases their self-estimation, the level of happiness and through this the quality of life improves. It means a smaller burden on the health care system, the society and the family. However the professionals taking part in family support must be reminded that not every family can perform special child educational tasks independently, and they need more intensive family support.

NEUROLOGICAL DISORDERS – Health Care Use & Policy Studies

IMPACT OF MEMANTINE TREATMENT INITIATION ON PSYCHOTROPICS USE: ANALYSES WITH THE RAMQ DATABASE

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OBJECTIVES: Behavioural and psychological symptoms of dementia such as aggressiveness, agitation and psychosis are common and very distressful for Alzheimer's disease patients and their caregivers. Their occurrence leads to an increased use of psychotropic medications. Memantine treatment has demonstrated significant benefit on these symptoms in the experimental setting of randomized clinical trials. The objective of this study was to assess the impact of memantine treatment initiation on the use of psychotropic medications in real life practice. **METHODS:** A retrospective prescription claims analysis was conducted using the Quebec provincial public health plan (RAMQ) database. Data on medical and pharmaceutical services were obtained for the period from January 2004 to March 2009 for a random sample of patients who received at least one scripts of memantine. Trends in the proportion of patients using psychotropic drugs, antidepressants, neuroleptics, and anti-anxiety agents were estimated one year before and after the first prescription of memantine. **RESULTS:** Data were obtained from the RAMQ for a total of 2,007 patients. The study sample was 82.2 years old on average (SD = 7.6), with 67.6% of female. Proportion of patients using a psychotropic drug in the year preceding the initiation of memantine increased by 58.5%, from a proportion of 0.450 to 0.713 while this proportion only increased by 3.5% (0.713 to 0.738) in the year following the memantine initiation. The increase in proportion of users of antidepressants, neuroleptics, and anti-anxiety agents before and after initiation of memantine were 48.3% (0.239 to 0.354) vs. 2.8% (0.354 to 0.364), 112.1% (0.219 to 0.465) vs. 1.9% (0.465 to 0.474) and 41.3% (0.175 to 0.247) vs. 1.5% (0.247 to 0.250) respectively. **CONCLUSIONS:** Results of this prescription claims analysis indicate that the increasing rate of psychotropic drugs, antidepressants, neuroleptics, and anti-anxiety agents use significantly decrease after the initiation of memantine.

HEALTH RELATED QUALITY OF LIFE DEFICITS IN MULTIPLE SCLEROSIS: A POPULATION CONTROL ANALYSIS

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OBJECTIVES: Existing assessments of the health related quality of life (HRQoL) in patients with multiple sclerosis have focused on persons with the disease. What has not been assessed is the extent to which the presence of multiple sclerosis generates HRQoL deficits compared to the general population. **METHODS:** Data are from the internet-based 2008 National Health and Wellness Survey in the UK, France, Spain, Italy and Germany. a total of 53,524 respondents completed the survey form, of whom 308 indicated they had a diagnosis of multiple sclerosis. Respondents completed the SF-12 generic HRQoL instrument. The analysis is based on the summary mental component scores (MCS), physical component scores (PCS) and health state utilities from the SF-6D items derived from the SF-12 instrument. A multivariate analysis (using ordinary least squares) was undertaken with the MCS, PCS and SF-6D utilities as dependent variables. The independent variables included a binary variable for the presence/absence of multiple sclerosis, socio-demographic characteristics, health risk factors (e.g., body mass index), country dummy variables and the Charlson Comorbidity Index (CCI). **RESULTS:** Persons reporting multiple sclerosis had substantially lower PCS scores (32.19 vs. 48.66; t = 24.60); MCS scores (39.78 vs. 46.53; t = 10.18) and utility scores (0.57 vs. 0.72; t = 23.57). In the multivariate modeling, the deficit associated with the presence of multiple sclerosis was substantially greater than any other independent variable in the PCS (−12.07; 95% CI: −14.02 to −10.12) and utility models (−0.11; 95% CI: −0.13 to −0.09). The utility decrement in the SF-6D model attributed to multiple sclerosis far outweighed the utility deficits attributable to the other independent variables. **CONCLUSIONS:** Compared to the non-multiple sclero-

sis population, there are substantial HRQoL deficits associated with the diagnosis of multiple sclerosis. These deficits are substantial and far outweigh those attributable to socio-demographic characteristics, health risk factors and the presence of comorbidities.

MANAGEMENT OF DRUG RESISTANT EPILEPSIES: HTA REPORT FOR THREE ITALIAN REGIONS

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OBJECTIVES: Management of drug-resistant epileptic patients includes different surgical alternatives. The target patient (i.e. resistant to at least 2 anti-epileptic drugs) may undergo neurosurgery or Vagal Nerve Stimulation (VNS). Scope of this work was to estimate hospital costs for neurosurgery and VNS and compare with Regional funding. **METHODS:** Investigated phases were: Non-Invasive Diagnostics-NID, Invasive-ID, Neurosurgery Intervention-NI or VNS-I, FollowUP-FUP, in 6 referral centres. Average/patient cost was estimated by microcosting; resource consumption by questionnaire; unit costs valued by full hospital costs (staff, operating-room, hospital-stay), outpatient-tariffs (diagnostics), market-prices (drugs, devices) at 2010 values. **RESULTS:** NID-phase: €5070/adult (€3516-€7356) and €4382/child. Ranges reflect variability of hospital-stay and staff time; 79% of total cost is due to diagnostics. DI-phase costs €15,900/adult (37%) and €16,261/child (44%). The cost range for adults (€14,098-€17,702) reflects variability of invasive video-EEG protocols. Regional funding is under-remunerative. Considering individual procedures, video-EEG costs €3,406/adult (cost driver: staff workload); invasive-video-EEG €34,790 (driver: electrodes). For children, video-EEG costs €3,063 and invasive-video-EEG €27,619; lower values are due to higher seizures frequency and shorter duration of recordings. Neurosurgery intervention cost is €16,230/adult and €18,894/child. For adults, variability (€14,730-€18,513) depends on the duration of intervention, number and cost of staffs. Intervention cost is similar in the three Regions and hospital imbalance is the result of under-funding by regional tariffs. VNS insertion cost is €24,543/adult (€3,518 for the intervention). Under-remuneration by tariffs is confirmed, even considering regional extra-tariffs for the device. Global treatment path for an adult (NID + intervention + FUP 5°yrs) amounts to €23,571-NI and €33,373-VNSI; for a child €20,066-NI. Regional data: Lombardy, €23,571-NI and €32,244-VNSI, for Lazio €25,571-NI and €34,176-VNSI, for Emilia Romagna €22,886-NI and €34,871-VNSI. **CONCLUSIONS:** Funding of the management of resistant epilepsies in the target patient appears insufficient to cover costs actually incurred by Italian hospitals, irrespective of organization and Regional funding.

NEUROLOGICAL DISORDERS – Conceptual Papers & Research on Methods

NON-LOCAL PATIENT-LEVEL DATA FOR COST-EFFECTIVENESS ADAPTATION TO THE SWEDISH ENVIRONMENT

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BACKGROUND: Currently, data-access barriers exist throughout key European health-technology assessment countries, including Sweden. Patient registries are of limited use due to frequent lapses in data integrity, completeness and limitations around access to these data. Additionally, data-protection legislation often prohibits the use of existing data from providers and insurance funds. These limitations hinder the development of longitudinal health-technology assessments required to evaluate the cost-effectiveness of new and existing therapeutics. **OBJECTIVES:** To explore the opportunities and limitations of applying non-local, longitudinal, patient-level treatment and outcomes data to the Swedish environment. **METHODS:** A large, longitudinal, patient-level treatment and outcomes data set (>55 million US patients from >90 health insurance plans) from the USA was used to create a sample of patients with multiple sclerosis who were undergoing treatment with disease-modifying drugs. Patient outcomes were evaluated with regard to the extent to which patients were adherent to therapy. Based on adherence levels, patient tendency to use incremental health care system resources was assessed. Adaptation to the local Swedish environment was performed by incorporating or acknowledging customary aspects of the Dental and Pharmaceutical Benefits Board (*Tandvårds-och läkemedelsförmånsverket*) cost-benefit analysis. Costs of outcomes, specifically interventions as a result of non-adherence, were based on Swedish cost-estimates from prior independent research. **CONCLUSIONS:** When performing a cost-effectiveness analysis, incorporation of patient-level data from another country invokes caveats on the results, including differences in access to care, cultural attitudes and social beliefs. However, in the absence of accessible local data, complete and sufficient data from another country (e.g., the USA) can serve as a surrogate. This may limit the broad acceptance of the study's results; however, it provides quantitatively supported and customized results based upon a robust data set, upon which health care decision-makers can derive resource allocation and prescribing decisions.