health care claims database and the claims and medical charts for a subsample of this population were reviewed to extract information pertaining to disease-modifying therapy, corticosteroid therapy, MS-related procedures, and diagnosis and relapse dates. The agreement between the data sources for each type of information was identified. Overall, both the MS data set and the claims database had 3,126 MS patients from a total population of 309,909 patients. In the MS data set, 303 had their medical records reviewed. Among patients with claims for glatiramer acetate (n=68), 95.6% also had it indicated in their charts. Claims agreed with charts for 91.8% of patients with a claim for intramuscular interferon β-1a (n=85), 92.3% with a claim for subcutaneous interferon β-1a (n=47); 87.5% of patients with a claim for interferon β-1b (n=48). Methylprednisolone was the most commonly indicated corticosteroid in both data sources, and among patients with evidence of a methylprednisolone fill in the claims (n=114), 66.7% also had a prescription in their chart. Most patients with claims-based evidence of MS-related procedures also had them indicated in their charts: 71.0% with MRI, 81.0% with lumbar puncture, and 66.7% with evoked potential testing. For both diagnosis and relapse dates, at least half of the patients had perfect agreement. CONCLUSIONS: There was a single document mixing instructions with the rater and response forms. The abundance of different versions of the same questionnaire both within and across studies was evident, as was the problem of word order 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 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 36 of the 70 available languages and in one language as many as 7 translations. CONCLUSIONS: The abundance of different versions of the same questionnaire both in its original US English form as in translation 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.

**THE IMPORTANCE OF GUIDELINES FOR CLINROS: THE ADAS-COG, A CASE STUDY**

Adrav C1, Giroudet C2, Berne C1, Acquadro C1

1MAP Research Trust, Lyon, France, 2MAP Institute, Lyon, France

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) has been 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 5 items, two studies used 6 items, and the rest of studies used at least 9 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 and response forms.

**THE EFFECT OF MULTIPLE COMPARISONS ADJUSTMENTS IN HEALTH-RELATED QUALITY OF LIFE BY WORK STATUS**

Jo J1, Gemmen E2, Bharmal M2

1Quintiles, Parsippany, NJ, USA, 2Quintiles, Falls Church, VA, USA

OBJECTIVES: Explore the effect of adjusting for multiple comparisons in analyzing outcome variables between more than two strata.

METHODS: Health-related quality of life (HRQol) via SF-12 Health Survey was measured at baseline for 191 patients in a U.S. multiple sclerosis observational study. HRQol was summarized in two continuous variables: Physical Component Score (PCS-12) and Mental Component Score (MCS-12). Patient work status was expressed by one categorical variable with four values: Working Full-time (W), Working Part-time (WP), Not Working due to other reasons (NW-MS), Not Working due to other reasons (NW).

CONCLUSIONS: The abundance of different versions of the same questionnaire both in its original US English form as in translation 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.

**BEVACIZUMAB FOR NEO-VASCULAR AGE RELATED MACULAR DEGENERATION—EVIDENCE SUMMARY**

George PP1, Molina JAD1, Heng BH2, Tan NWNH2, Lim TH1

1National Healthcare Group (NHG), Singapore, Singapore, 2NHG Eye Institute, Tan Tock Seng Hospital, Singapore, Singapore

OBJECTIVES: To evaluate evidence on effectiveness of intravitreal Avastin for neo-vascular age related macular degeneration (AMD). METHODS: We searched the Medline database for articles on bevacizumab for neo-vascular AMD, published between January 1, 2003 and September 1, 2009. The search criteria were English language manuscripts, human studies and search terms “bevacizumab”, “Avastin”, “age-related macular degeneration”, “ARMD”, “AMD”, “intravitreal” as a major heading. Boolean operators were used to combine the search terms. Studies in which primary outcome measures were visual acuity (VA) and central retinal thickness (CRT) were included for review. Two reviewers independently selected studies, assessed methodological quality using Scottish Intercollegiate Grading Network (SIGN) system. RESULTS: Overall, there were 520 citations, of which only 216 were relevant after title and abstract screening. Sixty-seven manuscripts were finally included for review, of which three were systematic reviews, three were randomized Controlled Trials (RCT), 49 were pre-post/ non-randomized studies and 13 were studies on safety and adverse effect. Three RCTs showed bevacizumab to be more effective than PDT (with or without triamcinolone). However, these RCTs had several methodological issues; evidence from these RCT’s was of moderate quality. Several pre-post and non-randomized studies have also suggested the effectiveness of bevacizumab, but these studies had several design limitations and hence the quality of evidence was deemed poor. Pooled outcome estimates, showed bevacizumab therapy, on average, improved VA by nine ETDRS letters and reduced CRT by 90 microns. Incidence of adverse events was low, similar to ranibizumab. Currently, moderate grade B to poor quality of evidence is available in support of bevacizumab for neo-vascular AMD. CONCLUSIONS: Based on current evidence (grade B) off-label Intravitreal bevacizumab seems to be safe and effective for the treatment of neo-vascular AMD in the short term, especially for underserved and financially challenged communities.

**RETURN ON INVESTMENT OF ABLATIVE FRACTIONAL LASERS**

Thom Jefferison, University, Philadelphia, PA, USA

OBJECTIVES: Conduct a return on investment (ROI) analysis of 8 ablative fractional lasers used for cosmetic facial plastic surgery from the perspective of a facial plastic surgeon.

METHODS: We identified 8 of the largest (based on sales volume) ablative fractional lasers for this analysis. ROI is (ΣTotal Revenue-ΣTotal Cost)/ΣTotal Cost) and is defined as the additional dollar returned from each dollar invested. Revenue was estimated as price per procedure multiplied by total number of procedures in a year. Total cost is a composite of purchase price and operating costs. In the base case analysis two purchase options were assumed 1) a 5 year lease with a $0 down payment and 2) a 3 year lease with a $0 down payment. In addition to monthly lease payments, included in the total cost estimate were service contracts, labor costs, and disposables. Sensitivity analyses were performed to account for variability in cost and revenue assumptions. RESULTS: Revenue for each laser was estimated to be $51,072/year. Under a 5 year lease, the assumed total cost of each laser ranged from $115,827–$240,397. This is compared to the total cost under a 3 year lease of each laser which ranged from $74,364–$124,878. Average ROI under the 5 year lease term was 54% and ROI varied between .03 (most expensive laser) and 1 (least expensive laser). The average 3 year ROI was .08, and ROI varied between -.35 (most expensive laser) and .38 (least expensive laser).

CONCLUSIONS: Based on the assumptions of our analysis the laser with highest ROI was the least expensive laser. While ROI is an important financial it should not be the sole means by which to determine a purchase. Physicians must also consider the clinical effectiveness of each laser and their own clinical judgment when making such decisions.

**THE ECONOMIC IMPACT OF DRY EYE DISEASE IN THE UNITED STATES**

Yu J1, Asche C2, Fairchild C3

1University of Utah, Salt lake city, UT, USA, 2University of Utah, Salt Lake City, UT, USA, 3Alcon Research Ltd, Fort worth, TX, USA

OBJECTIVES: Evaluate the annual cost of Dry Eye Diseases (DED) care in the United States from both a societal and a payer’s perspective. METHODS: A decision-tree model was developed to estimate the annual cost for managing a cohort of DED patients with differing severity of symptoms and treatments utilizing data collected from survey and the literature. The direct costs included over the counter (OTC) medications, cyclosporine, punctal plugs, physician visits, and nutrition supplements. The indirect costs were computed based on the self-reported productivity loss including absenteeism and presenteeism. Multiple-one way sensitivity analysis was employed to evaluate the impact of changes in parameters within their 95% confidence intervals on the cost estimate. RESULTS: In the base-case analysis, the total mean annual direct

**SENSORY SYSTEMS DISORDERS – Clinical Outcomes Studies**

Yu J1, Asche C2, Fairchild C3

1University of Utah, Salt lake city, UT, USA, 2University of Utah, Salt Lake City, UT, USA, 3Alcon Research Ltd, Fort worth, TX, USA

OBJECTIVES: Evaluate the annual cost of Dry Eye Diseases (DED) care in the United States from both a societal and a payer’s perspective. METHODS: A decision-tree model was developed to estimate the annual cost for managing a cohort of DED patients with differing severity of symptoms and treatments utilizing data collected from survey and the literature. The direct costs included over the counter (OTC) medications, cyclosporine, punctal plugs, physician visits, and nutrition supplements. The indirect costs were computed based on the self-reported productivity loss including absenteeism and presenteeism. Multiple-one way sensitivity analysis was employed to evaluate the impact of changes in parameters within their 95% confidence intervals on the cost estimate. RESULTS: In the base-case analysis, the total mean annual direct