portion of patients receiving each drug was calculated using defined daily doses. Changes in this distribution over time across all 27 Brazilian states were analyzed. **RESULTS:** The estimated yearly number of MS patients treated within the RIPS was 3,569,489,580, and 6,099 from 2006 to 2009. The probability of use of Glatiramer 20mg increased from 9.5% in 2006 to 20.1% in 2007, maintaining similar proportions in the following years (20.7% and 21.28%). The lower proportion of treated patients was observed for Betainterferon 22mcg, with a constant decrement from 2006 (17.26%) to 2009 (11.18%). The other three available Betainterferon formulations were represented in stable distribution of 20-25% each across all years with a slightly greater probability of use of the 30mcg intramuscular formulation (administered weekly). Between-states differences were also analyzed and revealed important spatial discrepancies. For instance, the probability of use of Glatiramer in 2009 was 8.2% in the North Region and 13% in Santa Catarina (South Region), and the proportion of MS patients taking Betainterferon 30mcg was 36% in Rio Grande do Sul (South Region) and 15% in Bahia. **CONCLUSIONS:** Although a proportional distribution of Glatiramer and Betainterferon formulations is coherent with the RIPS guideline which stated that their efficacy should be considered similar, significant between-states discrepancies in terms of treatment patterns were identified.

### Neurological Disorders – Research on Methods

#### PND60

**TESTING A COMPUTERIZED METHOD OF ASSESSING MOVEMENT ACCURACY**

**OBJECTIVES:** Computerized games challenge players to move quickly and accurately, but result in game-specific scores rather than objective data. Newly developed AccuTrak software with Wii technology can challenge players to move a cursor to an on-screen target using hands or feet, but also record data that might help identify coordination deficits in people with disabilities. Our purpose was to examine the reliability and validity of this method. **METHODS:** Thirty-six healthy adults and nine people with multiple sclerosis (MS) used a Wii device to move a cursor and click on the center of a target appearing on a computer screen. AccuTrak software provided feedback after each set of 6 trials regarding a) the time from target appearance to click, and b) distance from the target center. Each hand performed 30 trials; each foot performed 36 trials. Time and distance data were compared left-right and hand-foot, and to self-reported movement accuracy from the Movement Ability Measure as analyzed using item response theory methods. **RESULTS:** Intraclass correlation coefficients were 0.66 and 0.90, respectively, between dominant and non-dominant hands; between hand and foot performances ICCs were 0.70 and 0.94. The correlation between objective data and logit estimates of self-reported ability to move accurately was −0.53 for time and 0.21 for distance. The time-distance relationship fit a power trendline with R2 equal to 0.80 for healthy volunteers; volunteers with MS did not fit the same trendline. **CONCLUSIONS:** Reliability was better for distance data; concurrent validity with self-report was better with time data. Construct validity was supported in the observance of Fitts’ Law with speed-accuracy trade-off in healthy volunteers; people with MS tended to have increased error even with longer times. The methodology shows promise for use when investigating coordination deficits such as those in people with multiple sclerosis.

#### PND61

**EVALUATION OF CONSISTENCY BETWEEN MULTIPLE SCLEOROSIS REGISTRY PUBLICATIIONS**

**OBJECTIVES:** Multiple Sclerosis (MS) registries collect patient-level longitudinal data with the aim of improving our understanding of MS. These databases have provided extensive studies on the natural progression of MS. The purpose of this study is to assess how disease progression has been estimated and assess the consistency in methodology and results. **METHODS:** The publications of 10 major MS Registry websites were searched, followed up with keyword searches in Embase and PubMed. Population-based natural history studies on disease progression were included. Primary and non-primary endpoints, such as Expanded Disability Status Scale (EDSS) outcomes as a measure of progression, were extracted in addition to statistical methods. We evaluated the consistency between studies in terms of endpoints and statistical methodology. **RESULTS:** Our search identified 23 studies, of which nine met the inclusion criteria. The majority of papers utilized the Kaplan-Meier Survival technique to estimate time until disease endpoints and Cox proportional hazard models to determine prognostic factors. Lack of standards in reporting results prevented a global comparison. The most commonly reported endpoint was median time to EDSS six for MS or relapsing-remitting MS patients, enabling comparison between six studies. Values were reported between 11.9 to 27.9 years. Excluding studies prior to 1999, the median time to EDSS six was between 21.9 to 26.3 years. Studies reported from the European based Lyon and London registries were consistent (20-24 years), while studies in Canada and Germany showed greater disparity. Common prognostic factors included age and type of MS at onset. **CONCLUSIONS:** Lack of international standards for reporting outcomes in natural history studies hinder our understanding between studies, especially between the United States and Europe. While there is some consensus between registries regarding prognostic factors for progression, not all agree. Heterogeneity in underlying characteristics of the populations, evolution in best supportive care and access to treatments could all contribute.**

#### PND62

**MEDICATION POSSESSION RATIO (MPR): A COMPARISON OF TRADITIONAL MPR AND MODIFIED MPR FOR MULTIPLE SCLEROSIS (MS) PATIENTS PRESCRIBED DISEASE MODIFYING DRUGS (DMDs)**

**OBJECTIVES:** Although a predominant number of studies on the natural history progression of MS have been published, our understanding is limited. **METHODS:** There is a lack of international standards for reporting outcomes in registries. This study is to assess how disease progression has been estimated and assess the consistency in methodology and results. **RESULTS:** The mean adherence value for 2007 was 32% in Bahia (Northeast Region) and 13% in Santa Catarina (South Region) (n=3405) was 90.5% whereas the mean adherence value for MMPR (n=1200) was 78.0%. **CONCLUSIONS:** Medical treatment possession ratio (MPR) was calculated by summing the time from the first prescription to the last prescription to the time between the last prescription date plus the days supply on the last prescription and the first prescription date. The MMR used the same numerator but divided by the 365 days of the follow-up period. The MPR was calculated based on available data (no eligibility requirements) while MMPR requires continuous eligibility for the 12-month follow-up period. **RESULTS:** The mean adherence value for MMPR (n=3405) was 90.5% whereas the mean adherence value for MMR (n=2,145) was 78.0%. Based on MMR, 82.3% of patients were considered adherent (≥80%) while this value decreased to 63.7% for MPR. **CONCLUSIONS:** The MPR is often used to describe patient adherence. This adherence measure, however, can be calculated using different time periods in the denominator. These results demonstrate the importance of understanding the adherence calculation method and the population in which the measure is generated, and the potential implications to patient care.

#### PND63

**LITTLE OR NO TREATMENT EFFECT? APPLICATION OF GROWTH MIXTURE MODELS TO EXPLORE UNKNOWN SUBGROUPS OF DIFFERENTIAL RESPONDERS TO TREATMENT**

**OBJECTIVES:** To seek to identify unknown subgroups of patients who exhibit treatment effects using growth mixture model (GMM) analyses in studies where conventional analysis failed to find overall treatment effects. **METHODS:** Analyses were performed on data from two 26-week clinical trials assessing the effects of D-Cycloserine on cognitive function using the CDR System in patients with Alzheimer’s disease. Both trials consisted of three different dose ranges and three different groups and one placebo group. **RESULTS:** While no overall treatment benefit was identified, variability in PowAtt and SpeedMem was found suggesting possible subsets of patients with differential response to treatment. GMM analyses identified two distinct subsets of patients, one comprising 79% and the other 30% of the trial sample and 80% difference in cognitive function. The larger subset had low baseline SpeedMem scores compared to the smaller subset (range: 6–8 seconds total response time vs. 16–20 seconds) and exhibited no change over time. Within the smaller subset, the low/medium dose and placebo arms showed deterioration in SpeedMem scores of 3.4 to 9 seconds at 26 weeks. The low/medium dose patients showed the greatest deterioration whereas the high dose patients showed little deterioration at 26 weeks (1.5 seconds). **CONCLUSIONS:** Original analyses indicated no treatment benefit while LGMs showed all treatment arms to deteriorate over the trial. The GMMs, however, indicated a subset of patients on high dose (7% of trial sample) who showed little deterioration whereas all other treatment arms showed substantial slowing on memory tests. The GMMs thus have the potential to identify subsets of patients who may benefit from treatment even when the main trial findings are inconclusive.

#### PND64

**APPLICATION OF PREDICTIVE MODELING TO CLASSIFY FREQUENT SNIORING IDENTIFIED FROM ROUTINE MEDICAL EXAMINATIONS USING THE NHANES DATABASE**

**OBJECTIVES:** Increased upper airway resistance during sleep, or snoring, is a risk factor for sleep disordered breathing, and has been implicated in the development of adverse cardiovascular outcomes as well as components of the metabolic syndrome such as obesity, insulin resistance, and dyslipidemia. Despite increasing awareness of the health risks associated with frequent snoring, many patients remain untreated and may be unaware of snoring, especially if living alone. For this reason, we examined whether data available in routinely administered physiologic testing useful for detecting levels of habitual snoring. **METHODS:** A total of 10,482 respondents from the 2005-2008 National Health and Nutrition Examination Survey (NHANES), for which individual sleep survey, demographic, and physiological data were available, and who were not previously diagnosed with sleep apnea, were classified as frequent snorers (5 or more nights per week, n = 3222), or control (n = 7260). Sample data were partitioned into training (65%), validation (25%), and testing (10%) data sets using an equal stratification criterion for development of logistic regression, decision tree, and neural network predictive models using SAS Enterprise Miner. **RESULTS:** All three