health care services increased from $725,019,395 (mean = $395; 95% CL = $140–$650) to $3,049,290,075 (mean = $1,802; 95% CL = $618–$2,987). Total prescription medication expenditures increased from $941,406,990 (mean = $24; 95% CL = $18–$29) to $1,202,568,785 (mean = $34; 95% CL = $30–$37). Expenditures on office-based medical provider and emergency department visits showed minor increases while those on outpatient services exhibited a minor decrease. CONCLUSIONS: From 1996 to 1999, there was no difference in the prevalence of back pain however there was an $11.1 billion increase in direct costs. Inpatient stays, home care services, and prescription medications accounted for the majority of this increase.

**COST-EFFECTIVENESS OF DRUG THERAPY FOR POSTHERPETIC NEURALGIA**

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OBJECTIVES: Gabapentin and topical lidocaine patch (LIDO) are US FDA approved drugs for treatment of postherpetic neuralgia (PHN); tricyclics and opioids are also frequently used. The cost-effectiveness of drug therapy (Rx) for PHN is unclear. METHODS: We developed a Markov decision model to estimate the incremental cost-effectiveness of 5 management strategies for established PHN in 70 year olds: no therapy, gabapentin, LIDO, tricyclic (nortriptyline), or opioid (long acting morphine). The analysis took a societal perspective, using reference case recommendations of the Panel on Cost-Effectiveness in Health and Medicine. We used literature data for parameter values, assuming that Rx related pain relief equaled decreased PHN disutility. We also assumed that gabapentin, nortriptyline, and opioid had identical side effect likelihood (30%) and severity (possible bias against gabapentin). One-way and multiway sensitivity analyses were performed. RESULTS: In the baseline analysis, nortriptyline is eliminated by extended dominance. Compared to no therapy, opioid costs $60,000 per quality adjusted life year (QALY) gained. Compared to opioid, gabapentin costs $74,000/QALY. Compared to gabapentin, LIDO costs $795,000/QALY. In sensitivity analyses, LIDO is preferred (<575K/QALY) if pain relief was >31% (baseline 23.8%) or if only 1 patch is required (baseline 2). Opioid is not preferred if disutility due to stigma is associated with its use but is preferred if pain relief is >33% (base 32.3%). Nortriptyline is preferred if pain relief is >22.5% (base 19.0%). Gabapentin dominates all other Rx if its side effect frequency is <28%. Monte Carlo analysis, with variation of all sensitive parameters over clinically plausible ranges, confirms greater economic acceptability of gabapentin. CONCLUSIONS: In an analysis biased against its use, gabapentin is the most economically reasonable choice for drug therapy of established postherpetic neuralgia.

**ESTIMATES AND PATTERNS OF HEALTHCARE EXPENDITURES AMONG INDIVIDUALS WITH BACK PAIN IN THE US**

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OBJECTIVE: There is a lack of updated information on healthcare expenditures and expenditure patterns for individuals with back pain in the US. The objective of this study is to use a recently released national survey database to estimate total healthcare expenditures incurred by individuals with back pain in the US, calculate the incremental expenditures attributable to back pain among these individuals, and describe healthcare expenditure patterns of individuals with back pain. METHODS: This study used data from 1998 Medical Expenditure Panel Survey (MEPS), a national survey on healthcare utilization and expenditures. Total healthcare expenditures and per-capita expenditures among individuals with back pain were calculated. Multivariate regression models were used to estimate the incremental expenditures attributable to back pain. The expenditure patterns were examined by stratifying individuals with back pain by socio-demographic characteristics and medical diagnosis, and calculating per-capita expenditures for each stratified category. RESULTS: In 1998, total healthcare expenditures incurred by individuals with back pain in the US reached $90.7 billion and total incremental expenditures attributable to back pain among these persons were approximately $26.3 billion. On average, individuals with back pain incurred expenditures about 60% higher than individuals without back pain ($3495 vs. 2178). Among back pain individuals, at least 75% of service expenditures were attributed to those with top 25% expenditure and per-capita expenditures were generally higher for those who were older, female, whites, medically insured or suffered from disc disorders. CONCLUSIONS: Healthcare expenditures for back pain in the US in 1998 were substantial. The expenditures demonstrated wide variations among individuals with different clinical, demographic and socioeconomic characteristics.

**NEUROLOGICAL & PAIN DISEASES/DISORDERS—Quality of Life/Preference Based Outcomes**

**DONEPEZIL VERSUS RIVASTIGMINE UTILIZATION PATTERNS IN A RETROSPECTIVE CLAIMS ANALYSIS**

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OBJECTIVE: To compare the drug utilization patterns, in particular the compliance and persistency of therapy,
between donepezil and rivastigmine; two cholinesterase inhibitors used for the symptomatic treatment of patients with Alzheimer’s disease (AD). METHODS: This retrospective database analysis, utilizing data from a national Pharmacy Benefit Management company, considered prescription claims data collected from January 1, 2000 through March 31, 2002. All patients had no previous evidence of AD treatment for six months prior to the index date (defined as the date of the first prescription for either donepezil or rivastigmine), and all patients were followed for nine months post-index date. Donepezil and rivastigmine patients were required to have at least one prescription of either donepezil or rivastigmine treatment.

RESULTS: Data from 6635 patients were analyzed. The donepezil population comprised 6071 patients with a mean age of 77.8 years, and the rivastigmine population comprised 564 patients with a mean age of 78.0 years. There was no significant difference in the gender distribution between the donepezil and rivastigmine groups. The mean duration of therapy was 170.3 days for donepezil patients, compared with 75.2 days for rivastigmine patients (P < 0.001). Furthermore, 60% of rivastigmine patients discontinued therapy in the first 31 days of treatment, compared with 20% of donepezil patients in the same treatment period (P < 0.0001). At the end of the 9-month study, more donepezil patients remained on therapy (38%) than rivastigmine patients (8%) (P < 0.0001). CONCLUSION: The majority of rivastigmine patients discontinued treatment within one month, while over one-third of donepezil patients remained on therapy for at least nine months. This study suggests that patients are better able to maintain persistent treatment with donepezil than rivastigmine.

PMP26

VALIDATING THE FACTOR STRUCTURE OF THE DISQ-24 USING STRUCTURAL EQUATION MODELING

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OBJECTIVE: The objective of this analysis was to evaluate the psychometric properties of the 24 Hour Headache Disability Questionnaire (Disq-24) using confirmatory factor analysis. Disq24 is a 14-item questionnaire with a 6-point Likert-type scale that measures disability in the 24 hours following onset of headache pain. METHODS: We utilized data from an acute migraine treatment clinical trial in which the Disq-24 was administered 24-hours after onset of headache pain (N = 323). The Disq24 was originally hypothesized to measure the impact of headache on Family/Social Activities, Work Activities and Emotions/Feelings. It is uncertain whether the Family/Social/Work Activities domain should be combined to a single factor. We tested the hypotheses by estimating 2-factor and 3-factor confirmatory factor-analytic models using maximum likelihood fitting function in AMOS Version 4.0. To assess data fit, we used the chi-square test and fit indices including Tucker-Lewis Index (TLI), Incremental Fit Index (IFI) and Root Mean Square Error of Approximation (RMSEA). RESULTS: The chi-square statistic indicated that the 2-factor model had a poor fit (p = 0.000). However given the sensitivity of this test to sample size, the other fit indices TLI (0.923), IFI (0.936) and RMSEA (0.107) indicated a reasonably good fit. Item 8 (0.434) and Item 10 (0.449) had low squared multiple correlations, indicating only a small proportion of variance in these items was explained by this model. Data fit improved marginally in the 3-factor model but correlation between the Work and Social Factor was 0.943 indicating that both were driven by a single factor. Deleting Items 8 and 10 resulted in a model with TLI (0.947), IFI (0.958) and RMSEA (0.098) indicating a significant improvement in fit. CONCLUSIONS: Results from CFA suggested better data fit with a 2-factor structure. The psychometric properties of the instrument can be improved by revising/deleting Items 8 and 10.

PMP27

ASSESSING BEHAVIORAL FUNCTIONING IN ALZHEIMER’S DISEASE: BENCHMARKING WITH THE BEHAVE-AD-FW

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OBJECTIVES: Understanding rating scale properties is essential in using instruments to determine clinically important differences associated with disease treatments and determining their value. This study seeks to determine whether the Behavior Pathology in Alzheimer’s Disease Frequency Weighted Severity Scale (BEHAVE-AD-FW) measures symptoms of dementia distinct from cognitive function. METHODS: Baseline data on 215 outpatients with probable AD in a randomized, double-blind, placebo-controlled clinical trial. Higher scores on the BEHAVE-AD-FW total score and category scores (paranoid/delusions; hallucinations; activity disturbance; aggression; diurnal rhythm variation; affective disturbance; anxieties/phobia) indicate more pathological behavior. Pearson correlations were used to correlate the BEHAVE-AD-FW (total score and category scores) with cognitive function as measured by the Alzheimer’s Disease Assessment Scale—cognitive subscale (ADAS-cog) and Mini Mental State Exam (MMSE). RESULTS: Mean age was 75.12 years and the percentage female was 57.94%. At baseline, the mean (standard deviation, sd) scores of cognitive function reflected a population with mild AD: ADAS-cog, 21.88 (8.65); MMSE, 19.77 (3.67). The BEHAVE-AD-FW total score range was 0 to 25; its mean (sd) and median were 4.10 (4.68) and 3. Seven sub-scales of BEHAVE-AD-FW display significant levels of symptoms (p < 0.005). Although statistically significant and in the expected direction, the magnitude of the correlations of the total score of the BEHAVE-AD-FW with ADAS-Cog (r = 0.22) and MMSE (r = −0.19), was relatively low.