into the US marketplace. METHODS: Generic fluoxetine became available in August 2001. Pharmacy claims data from January 2000 to December 2002 were used to analyze utilization of the SSRI class (consisting of the following: Celexa, Zoloft, Paxil, Effexor XR, Prozac, and fluoxetine). Utilization data for each drug in the class were separated into two group periods, pre- and post introduction of generic fluoxetine. The pre- and post periods consisted of 19 and 17 months respectively. Utilization of Prozac and fluoxetine was used as a reference to compare utilization of other drugs in the class. T-test analysis was used to compare and show differences between pre- and post-periods for each drug. RESULTS: Prozac/fluoxetine average monthly prescription utilization for pre- and post-periods were 3434.16 and 4349.56 respectively (p < 0.001), which indicates an average increase in monthly utilization by 27%. Celexa average monthly utilization for pre- and post-periods were 1252.95 and 2848.4 respectively (p < 0.001), demonstrating an increase in utilization by 127%. Effexor XR average monthly utilization during pre- and post-periods were 908.58 and 2084.38 respectively (p < 0.001), indicating an increase of 129%. Paxil average monthly utilization for pre- and post periods were 2834.9 and 4059.6 respectively (p < 0.001), indicating an increase of 43%. Lastly, Zoloft's average monthly utilization for pre- and post periods were 3915.05 and 4615.88 respectively (p < 0.001), which resulted in an increase of 18%.

CONCLUSION: In this managed care setting a significant increase in monthly utilization was seen for all drugs with the exception of Zoloft.

NEUROLOGICAL DISEASES/DISORDERS

COST-EFFECTIVENESS OF TOPIRAMATE AS ADJUNCTIVE TREATMENT IN REFRACTORY EPILEPSY—A PROBABILISTIC ASSESSMENT OF TREATMENT STRATEGIES

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OBJECTIVES: Adapting new medical therapies is a complex decision that must take into account many factors, including differences in efficacy, tolerability, safety, and costs. Long-term comparative trials, especially among newer antiepileptic drugs (AEDs), are lacking, therefore decision models are needed to guide treatment decisions. We aimed to develop an economic model of the treatment of refractory epilepsy in the UK, and to assess the cost-effectiveness of topiramate as adjunctive treatment in refractory epilepsy compared to other newer AEDs. METHODS: A Markov model was developed to combine data from published clinical trials, cost-of-illness studies, epilepsy-related mortality surveys, and utility studies. The expected costs and utilities associated with possible treatment strategies (1st and 2nd line add-on treatments) for newly diagnosed epilepsy patients with partial seizures were calculated and compared. In those patients requiring a second-line add-on, it was assumed that the first-line add-on treatment was stopped. A probabilistic analysis was undertaken and the cost-effectiveness frontier mapped. RESULTS: First and second-line adjunctive treatment with topiramate followed by levetiracetam was the least costly add-on strategy, and this strategy had the highest probability of being cost-effective at currently accepted values of the ceiling ratio (<£30,000/QALY). Levetiracetam first-line, followed by topiramate second-line generated additional QALYs, but was more expensive, and was optimal only if the ceiling ratio fell between £30,000 to £60,000/QALY. Scenarios combining sequences of topiramate and lamotrigine deliver a few additional QALYs at substantial additional costs (became optimal only if the ceiling ratio was >£60,000/QALY), while adjunctive treatment with levetiracetam and lamotrigine are both more expensive and generate less QALYs than the other scenarios, therefore cannot be preferred. CONCLUSIONS: This model suggests that topiramate first-line adjunctive treatment followed by levetiracetam second-line (or vice versa) are cost-effective treatment strategies in patients with partial seizures refractory to other treatments.

AN ESTIMATE OF THE DIRECT COSTS OF MIGRAINE IN THE UNITED STATES USING THE MEDICAL EXPENDITURE PANEL SURVEY

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OBJECTIVES: As sales of anti-migraine prescription medications increased by more than 10-fold between 1994 and 1999, it is important to quantify the impact on the cost of migraine treatment. The objectives of this study were to determine the direct costs of migraine in the U.S. population and to stratify those costs by type of medical care. METHODS: Retrospective analysis was conducted of the 1999 Medical Expenditure Panel Survey. The survey provided data from a nationally representative sample of 24,618 respondents and their medical care and health insurance providers. Data utilized in this study included medical conditions and use and payments for medical care. Migraineurs were identified using ICD-9-CM codes and direct costs were calculated using patient and third-party payments for migraine related medical events by type of medical care. Sample estimates were projected to the population and 95% confidence limits were calculated using the Taylor expansion method. RESULTS: Direct costs incurred per migraineur were $293. Total direct costs of migraine were $1,429,053,413. The highest proportion of these costs
was for prescription medications, at $747,551,471 (mean = $59.87; 95% CL = $51.95–$67.78). Office-based medical provider visits were $396,946,065 (mean = $73.50; 95% CL = $60.20–$86.80). Emergency department visits were approximately $110 million while outpatient services, inpatient stays, and home health services were each below $100 million. CONCLUSIONS: The cost of treating a migraineur was estimated to be $293 in 1999, nearly 3 times higher than $100 reported in 1994. However, total direct costs in 1999 were $1.5 billion, only 50% higher than $1 billion reported in 1994. Prescription expenditures at greater than 50% of direct costs were a major factor in the increase in incident cost. The rate of increase in total costs was less than the rate of increase in incident costs, suggesting either greater drug efficacy or reduced use of more costly medical care alternatives.

ND 3
ECONOMIC ANALYSIS OF ACUTE MIGRAINE THERAPY UTILIZATION WITHIN THE WISCONSIN STATE MEDICAID POPULATION
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OBJECTIVES: There is a wide array of pharmacological agents available for the acute treatment of migraine headache. The 5-HT1B/1D receptor agonists (triptans), ergotamine derivatives, and isometheptene/dichloralphenazone combination products represent the most frequently prescribed migraine-specific therapies. Our objective is to describe the costs and explore the utilization patterns of migraine-specific therapies in the Wisconsin Medicaid population. METHODS: Wisconsin Medicaid drug utilization data for 2001 was used. These data were obtained directly from the Centers for Medicare & Medicaid Services website. National Drug Codes were used to extract quarterly utilization data for products belonging to three classes of acute migraine therapies (triptans, ergotamine derivatives, and isometheptene/dichloralphenazone combination products). Analysis of utilization was performed for each quarter of 2001 by aggregating the amount and number of claims reimbursed across products. Further analysis was conducted to examine the average cost per claim between pharmacological classes and individual triptan therapies. RESULTS: In 2001, the Wisconsin Medicaid program reimbursed acute-migraine drug treatment claims totaling $2,372,463.66, representing 15,120 prescription claims. Most of this expenditure (98.3%/$2,331,090.71) was a result of triptan claims, with 1.5% ($34,715.25) and 0.2% ($6,657.70) representing ergotamine derivative and isometheptene/dichloralphenazone combination product claims, respectively. Within the triptan class, sumitriptan (9,122/$1,599,212.19), rizatriptan (2,388/$306,947.59) and zolmitriptan (1,877/$264,997.76) composed the first, second, and third most utilized products. Cost per claim values within the oral triptans varied greatly with a high of $180.72 (sumitriptan) and a low of $81.51 (almotriptan). CONCLUSION: In the Wisconsin Medicaid population, utilization of migraine-specific therapies was weighted heavily towards the triptans. With the large variation in claims cost among oral triptans, considerable cost savings could be realized if a system was implemented to increase utilization of newer, second-generation triptans (non-sumatriptan) as first-line therapy. However, such a clinical decision should be supported by comparative clinical trial data that supports equivalent or superior efficacy to sumatriptan.

ND 4
ARE ELDERLY PATIENTS RECEIVING APPROPRIATE ANTIEPILEPTIC DRUGS?
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OBJECTIVE: Clinical recommendations advocate use of carbamazepine, lamotrigine, and gabapentin rather than phenobarbital and phenytoin for treating older patients with epilepsy. We describe prescribing patterns for older veterans newly diagnosed with epilepsy, determine if practice is consistent with clinical recommendations, and describe those at greatest risk of receiving these potentially inappropriate antiepileptic drugs (AEDs). METHODS: Retrospective national inpatient, outpatient, and pharmacy data from the Veterans Health Administration (VA), were used to identify veterans >64 years with an epilepsy diagnosis during fiscal year 1999 (FY99) who also received AEDs from the VA in FY99. Patients who were seen in the VA during FY97–98 with no previous diagnosis of epilepsy were selected. We identified patients’ AED regimen for FY99, demographic characteristics, neurology consultations, and disease severity. We used logistic regression to identify patients most likely to receive phenobarbital and phenytoin. RESULTS: Eighty-five percent received monotherapy. Ten percent of patients received regimens containing phenobarbital, 68% received regimens including phenytoin, and 25% received only recommended AEDs. Logistic regression analyses indicated that patients with more severe disease were less likely to receive phenobarbital monotherapy than other monotherapy (OR: 0.47, 95% CI 0.22–0.98) and phenobarbital combinations than other combinations (OR: 0.29, 95% CI 0.13–0.70). Patients receiving neurology consultation were less likely to receive phenytoin monotherapy than monotherapies consistent with clinical recommendations (New OR: 0.49, 95% CI 0.39–0.61). CONCLUSIONS: A surprising number of newly diagnosed veterans received phenobarbital despite its well known adverse effects. Moreover, our finding that nearly 70% receive phenytoin is not consistent with