

**OBJECTIVES:** To estimate the annual per patient cost of Amyotrophic Lateral Sclerosis (ALS) in Greece from a societal point of view. **METHODS:** Data on direct costs (medications, laboratory/imaging tests, consultations, hospitalizations) were obtained through retrospective chart review of a sample of patients followed-up in Aeginition University Hospital, a reference centre for ALS in Greece. Eligible patients were those that visited the ALS clinic in the previous 6 months and had fully recorded data for the previous year. Patients were also personally interviewed, following consent, based on a strictly-structured questionnaire, with an aim to record indirect costs incurred in the previous year (work absenteeism, professional home help, walking aids). Unit prices for health-resource use were the official NHS prices. Work loss and home help were costed with the hourly rate of the basic salary, in order to obtain a conservative approach. Costs are reported in year 2011 Euros. **RESULTS:** The sample (N=34) was 53% female with an average age of 61.6 years. Total average annual per patient cost was 7450.6€ (standard deviation: 6423€), out of which 4136.3€ (s.d. 1,350€) were direct and 3314.2€ (s.d. 6190€) were indirect expenditure. Medications accounted for 32.7% of the total cost, followed by professional home help (24.4%), work absenteeism (17.7%) and hospitalizations (9.2%). Women had a significantly higher average cost than men (10,004€ vs. 4,347€,  $p < 0.05$ ), mostly as a result of indirect expenditures from productivity loss. Age >65 did not have a significant impact on outcomes due to the substitution of productivity losses (<65) by home help, for patients >65. **CONCLUSIONS:** ALS entails a significant per patient economic burden in societal terms. Cost-of-illness data, even for rare diseases, provide important inputs for the decision-making process in health as well as for awareness purposes.

## PND21

## COST OF ALZHEIMER'S DISEASE IN ROMANIA

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**OBJECTIVES:** Alzheimer's disease (AD) is the most common form of dementia. Estimates of the cost of AD in Romania come from external sources and are based on extrapolations and assumptions. We tried to replace some of the assumptions with actual data obtained from official sources and based on data obtained from the Bucharest Memory Center. **METHODS:** This is an empirical investigation of the economic cost of AD in Romania in 2010. Direct and indirect costs are estimated and allocated to the AD by taking in consideration an extrapolation of European data for incidence and prevalence, actual cost for medication provided by National Insurance House for specific medication used in prevention an treatment of AD, actual data provided by Ministry of Labor and Social Security for persons with AD living in nursing home. Cost of care provided by family members were estimated on a telephonic cross-sectional survey, carried out using the database of Bucharest Memory Center. **RESULTS:** The calculated cost of Alzheimer's disease in Romania is 187.022.387 €, direct medical cost of 62 millions €, 7.5 million € for hospitalization, medication of 34.9 million €, ambulatory medical services of 0.4 million €, nursing home costs of 4.6 million €, parapharmaceuticals cost of 15 million € and indirect (informal) cost of 124.5 million €. **CONCLUSIONS:** There is a major discrepancy between the cost obtained by Wimo A. et al in 2010 and ours, which is 10 times smaller. The main difference is due the small number of people hospitalized in specialized centers, only 3%, the small number of people receiving treatment - only 14% of the total number of patients with DA. Romania must strive to remove the inequities concerning informal costs and be prepared for an exponentially increase of costs as the care of patients will normalize.

## PND22

## A COST-OF-ILLNESS ANALYSIS OF MYASTHENIA GRAVIS IN GREECE

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**OBJECTIVES:** To estimate the annual per patient cost of Myasthenia Gravis (MG) in Greece from a societal perspective. **METHODS:** Data on direct costs (medications, laboratory/imaging tests, consultations, hospitalizations) were obtained through retrospective chart review of a sample of patients followed-up in Aeginition University Hospital, a reference centre for MG in Greece. Eligible patients were those that visited the MG clinic in the previous 6 months and had fully recorded data for the previous year. Patients were also personally interviewed, following consent, based on a strictly-structured questionnaire, with an aim to record indirect costs incurred in the previous year (premature retirement, work absenteeism, decreased productivity, professional home help). Unit prices for health-resource use were the official NHS prices. Productivity losses and home help were costed with the hourly rate of the basic salary, in order to obtain a conservative approach. Costs are reported in year 2011 Euros. **RESULTS:** The sample (N=32) was 56% female with an average age of 57 years (men: 66.6, women: 49.5). Average total annual per patient cost was 4125.4€ (standard deviation: 5287€), out of which 614.3€ (s.d.: 496€) were direct and 3511.5€ (s.d.: 5260.5€) were indirect expenditure. Early retirement, home help, and medications were the major cost drivers of total cost (49%, 31% and 8% respectively), while medications had the biggest influence when focusing on direct costs alone (51%). Women had a higher average cost than men (5173€ vs. 2777€), principally as a result of indirect expenditures from lost productivity. **CONCLUSIONS:** MG is a burdensome disease, in socioeconomic terms, that seems to affect women more heavily, compared to men, most probably due to symptom onset at a younger (and more productive) age. Even in the case of low prevalence or rare-diseases, cost-of-illness analysis can promote awareness and contribute with the necessary data to health policy decisions.

## PND23

## COST OF THE INFORMAL CARE OF MULTIPLE SCLEROSIS IN SPAIN

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**OBJECTIVES:** Multiple sclerosis (MS) is a prevalent, chronic and disabling disease, mainly affecting young adults. The aim of the present work is to analyse the cost of the informal care of MS according to disability, in different Spanish regions. **METHODS:** Patients with clinical diagnosis of MS, from different Spanish regions, were selected between december 2006 and december 2010. The patients were divided in 3 groups based on their disability: mild (EDSS 0-3.5), moderate (EDSS 4.0-6.5) and severe (7.0-9.5). They were invited to answer a questionnaire, with demographic, social, employment status data, clinical aspects, as well as data about the consumption of sanitary and no-sanitary resources during the MS process. The replacement method was used to estimate informal costs. **RESULTS:** We analyzed 1107 patients and 317 caregivers. The percentage of patients requiring informal care increased with disability, ranging from 7% (mild disability) to 73% (severe disability) and daily hours of informal care per patient, 0.4 (mild disability) to 11.8 (severe disability). These informal cares can also vary depending on the Spanish region analyzed. The caregiver mean age was 53 years, is mostly the patient's partner (54%) and has been practicing as a caregiver a mean of 10 years. The estimated cost of informal care increased with disability, ranging from 777 euros/patient/year (mild disability) to 26,987 euros/patient/year (severe disability). The cost grew to 45% of the total cost of the disease in advanced stages. **CONCLUSIONS:** The estimated cost of informal care increased with disability, ranging from 777 euros/patient/year (mild disability) to 26,987 euros/patient/year (severe disability). It represented almost half of the total cost of the disease in advanced stages.

## PND24

## COST OF SYMPTOMATIC DRUG THERAPY IN MULTIPLE SCLEROSIS

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**OBJECTIVES:** Drug therapy in Multiple Sclerosis (MS) accounts for a significant proportion of the economic burden of this disease. Expenditure on disease-modifying-therapies (DMT) in Ireland was €32.7 million in 2009, 1.63% of total pharmaceutical expenditure. In addition to DMT, other non-DMT drugs are used to treat MS symptoms. This study describes the patterns and cost of non-DMT (other) drug utilisation in Ireland. **METHODS:** A cohort of patients dispensed a DMT during 2009 were identified from a national prescribing database. An analysis of all other drugs dispensed for this cohort during 2009 was undertaken. **RESULTS:** A cohort of 2749 people on DMT was identified (39.3% of the estimated Irish MS population) 69.0% of whom also received other drugs costing €2.7 million (estimated 7.6% of total MS drug costs). The mean other drug cost per person on DMT was €1417 (SD €1863). Drug classes contributing most to other drug costs were antiepileptics (17.1%) used for neuropathic pain, urinary antispasmodics (8.1%) and muscle relaxants (7.0%). The top 10 drugs by cost included pregabalin, gabapentin, modafinil, tizandine, tolterodine, evening primrose oil, atorvastatin, venlafaxine, baclofen and escitalopram (39.9% of other drug costs). The most commonly prescribed drug classes - antidepressants, analgesics and NSAIDs, dispensed to over 20% of the cohort in each case, accounted for just 12.7% of other drug costs. **CONCLUSIONS:** Characterisation of non-DMT drug use provides useful information for clinicians, healthcare payers, and those undertaking cost-of-illness studies. While these drugs account for a smaller proportion of overall costs than DMT, they are an indication of overall morbidity and wider resource utilisation e.g. urological drugs as an indicator for physiotherapy and incontinence equipment. These results can be considered in the design of future cost-of-illness surveys which often include an exhaustive list of individual drugs.

## PND25

## USE OF DRUG REIMBURSEMENT AS MARKERS OF DISEASE FOR EPIDEMIOLOGICAL AND DIRECT COST ANALYSIS: THE CASE OF EPILEPSY IN FRANCE

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**OBJECTIVES:** Population characteristics of patients with epilepsy remain poorly documented in France. Reimbursement databases may be useful to perform cost and epidemiological studies provided that patient diagnoses can be identified either directly, or indirectly through the use of antiepileptic drugs (AEDs) as markers. This study explored the possibility to use the French reimbursement database to determine the prevalence and direct cost of epilepsy. **METHODS:** The "EGB" reimbursement database is a 1/97 representative sample (500,000 individuals) of the population covered under the French General Scheme. Only a fraction of patients fully covered for epilepsy can be identified on a diagnosis basis. The rest of them can only be identified through their treatment by AEDs, but some are not specific to epilepsy (e.g. benzodiazepines). An algorithm was built to identify patients with epilepsy and calculate an estimation of the prevalence. In parallel, total medical expenses of patients were derived on the fully covered sub-population. **RESULTS:** Only patients treated with polytherapy (≥2 AEDs) could be identified in a relevant way by an algorithm based on drug use. The prevalence of epilepsy in this subgroup in 2009 was estimated between 1.83% and 2.79% (93,000 - 142,000 patients). A proportion of 70.1% to 71.6% were fully covered by insurance for their expenses, with epilepsy alone as a cause in only 27 to 33% of them. The most frequent comorbidities were psychiatric disorders and incapacitating stroke. The annual per capita expenses were in the range of 6601€- 6696€ for patients with polytherapy,