surgical history, ophthalmic medications, visual acuity, visual field parameters, and intraocular pressures. Economic data, including physician visits (ophthalmologist/optometrist), diagnostic and monitoring tests, glaucoma medications, medical and surgical procedures, and specialized glaucoma-related services, were obtained from patient-level billing and reimbursement records. Specialized LVC services collected via the chart review for clinical and economic analysis included utilization of low-vision devices (e.g., CCTV and magnifying devices), patient education and counseling for lifestyle modifications (e.g., glare strategies and mobility training), and social/support services.

RESULTS: Of the 61 patients reviewed, 42% were male. The mean age of the sample cohort was 75 years (minimum 33 years to a maximum of 93 years). Of the 28 patients with applicable data, 54% had a family history of glaucoma. Comorbid conditions among the sample patients were hypertension (47%) and diabetes (12%). The breakdown of payment type was 56% Medicare and 21% Medicaid. At the same time, 33% of patients had private coverage and 8% paid for their services out-of-pocket. Mean direct cost of care was $19,960 per patient during the first year of LVC, with 22.6% attributable to LVC. CONCLUSIONS: LVC contributed to the healthcare utilization and direct costs of treating end-stage glaucoma patients.

PREVALENCE OF FRACTURES AND DEPRESSION AND THEIR ASSOCIATION WITH BLINDNESS IN A MEDICARE POPULATION WITH PRIMARY OPEN-ANGLE GLAUCOMA: AN EXAMINATION OF BLINDNESS-RELATED COMORBIDITIES AND THEIR COSTS

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OBJECTIVES: To examine blindness-related comorbidities in a Medicare population with primary open angle glaucoma (POAG), specifically fractures (including hip, femoral, and vertebral fractures) and depression (including several types of depressive/neurotic conditions), and their association with being diagnosed as blind. A secondary objective is to examine the total Medicare-related healthcare spending between non-blind and blind glaucoma patients relative to comorbidities. METHODS: The data source was a Medicare 5% Sample of 1998 Glaucoma Patients with and without blindness (n = 70,060). Odds ratios (OR) were created from the annual prevalence rates of fractures and depression between blind and non-blind groups. Multiple propensity scoring methods were used to account for selection bias in those patients coded for blindness. Comparisons were conducted between blind (cases) and non-blind (controls) groups before and after matching cases to controls by propensity score. Matched and unmatched results were also stratified by age, sex, and Charlson Comorbidity Index scores. Medicare reimbursements were compared between groups using non-parametric statistical methods. RESULTS: The overall matched odds ratios for depression and depressive disorders in the blind group were 1.88 (95% CI: 1.08–3.28) and 1.63 (95% CI: 1.05–2.52), respectively. Hip fractures had a significant OR 4.86, (95% CI: 1.158–20.36) specifically in the unmatched 65–69 year-old cohort but not in the matched. Total age-adjusted non-eye related Medicare costs were significantly greater in the blind group ($2510 vs. $1784). The mean annual cost for depression related procedures/visits for those diagnosed with depression was $411 in the blind group vs. $185 in the non-blind group. CONCLUSIONS: There is an association with being blind in a glaucoma population and having a greater risk for depression and fractures (in younger cohorts). The blind glaucoma population has greater age-adjusted eye-related and total (non-eye-related) Medicare costs than non-blind glaucoma subjects.

A NATION-WIDE ESTIMATE OF NON-MEDICAL SOCIO-ECONOMIC CONSEQUENCES ATTRIBUTABLE TO VISUAL IMPAIRMENT IN FRANCE: A SOCIETAL PERSPECTIVE

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OBJECTIVES: The non-medical costs of visual impairment to individuals and the nation are largely unknown. Data produced by state agencies are not relevant. Knowledge of these costs is essential when allocating resources to therapeutic or preventative programs. METHODS: We analysed two representative nation-wide surveys of 14,603 subjects living in institutions, and 16,945 in the community, with the object of documenting handicap. Subjects were classified as blind (no light perception), low vision (LV: loss of shape perception), or control. We also costed the following items: family income, social allowances, devices, home modification, paid assistance, time spent by carers and unmet needs. Next, we standardised item consumption on confounding factors, using logistic regression. Lastly, unit costs attributable to visual impairment were estimated and compared with the costs incurred by control subjects. Our economic standpoint was that of society. RESULTS: The national non-medical costs attributable to LV (94,386€; 14,639€ with unmet needs) accounted for almost the entire costs of visual impairment (10,749€; 16,302€ with unmet needs). However, the average annual cost/patient was 7826€ for LV (12,154€ with unmet needs) versus 19,173€ for blindness (24,036€ with unmet needs). Lost family income amounted to 4552€ and the carers’ burden to 2525€. In addition, 5080€ of social allowances were not distributed because many blind people do not register. CONCLUSIONS: Indemnification of visual handicap should cover total non-medical costs including the predominant unmet needs. Thus strategies of resource allocation, intended to alleviate visual impairment, should include all economic dimensions, extending to non-medical items.

ESTIMATION OF NATIONWIDE COSTS OF ANNUAL ASSISTANCE ATTRIBUTABLE TO VISUAL IMPAIRMENT, FROM AN ACTIVITY OF DAILY LIVING QUESTIONNAIRE

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OBJECTIVES: To estimate nursing time and costs attributable to visual impairment from a questionnaire documenting activities of daily living (ADLs) in France. METHODS: 356,208 citizens in the general community were selected at random. A sub-sample of 16,945 subjects (blind, low vision and control) was further selected randomly and interviewed. The ADL questionnaire comprised of more than 30 items, including washing, cooking, mobility, shopping, cleaning, etc. A factor analysis was performed and six clusters were identified: hygiene and meals; physical capacity; transport and housework; ability to move; behavioral problems; and autonomy. Three levels of dependency were predefined for each cluster: none; subject required partial help; subject required complete help. A subset
of 128 scenarios was selected from 729 possible scenarios (3 power 6) in order to test second-order interactions. Interviews with 21 healthcare professionals (nurses and nursing auxiliaries) ascertained the duration of assistance required for 18 of the 128 scenarios, selected at random. The economic perspective was that of society. The link between time spent, costs, and factor scores was derived from linear and non-linear models. These functions were applied to the 16,945 subjects in order to estimate the assistance time required. Comparisons between blind, low vision and control subjects were performed using an ANOVA with adjustments for age, number of people in the household, and number of handicaps. RESULTS: Average care-hours per annum were 682.7 for blind people, 261.4 hours for household, and number of handicaps. The annual care budget was 6730€ for blind subjects, and 1463€ for subjects with low vision. The total mean yearly nationwide care cost to families for visual impairment was estimated at 2025.96m. CONCLUSIONS: Screening and treatment programs aimed at preserving vision should benefit society and would help to reduce expenditures on assistance time due to visual impairment.

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NON-MEDICAL COSTS RELATED TO VISUAL IMPAIRMENT IN FOUR EUROPEAN COUNTRIES (FRANCE, GERMANY, ITALY AND THE UNITED KINGDOM)

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OBJECTIVES: To estimate the non-medical costs related to visual impairment in four European countries. METHODS: Counts of visually impaired people, defined according to local rules, were extracted from National Registers, and for France from two recent nation-wide surveys realized by INSEE. Estimated numbers of non-registered persons were based on the literature and expert opinion. Estimation of non-medical cost included stay in institution, medical devices, home adaptations, burden on carer, paid home help, loss of income and social allowances related to visual impairment. Unit costs were obtained from National databases, local manufacturers and the Web. Also, in France, interviews were conducted on 21 healthcare professionals to estimate the duration of assistance required by visually impaired people. These durations were used to evaluate the cost of paid home help in each of the four countries. RESULTS: Visually impaired subjects in France, Germany, Italy and the UK numbered, respectively, 1.27, 0.73, 1.03 and 1.11 million, including 55.9%, 10%, 80%, and 64% non-registered persons. The institutionalization rate of visually impaired persons was 7.8%, 9.6%, 10.9% and 10.0%, respectively. Total annual costs for visually impaired people were estimated at 10,749€m, 9338€m, 12,069€m, and 15,180€m in France, Germany, Italy and the UK, respectively. The main costs attributable to visual impairment were “loss of income” (22.6% to 42.5%), “burden on carer” (23.5% to 38.6%), “paid assistance” (12.4% to 27.8%) and “social allowances” (4.8% to 8.8%). CONCLUSIONS: The total non-medical costs attributable to visual impairment are considerable, amounting to 8.1%, 4.7%, 12.4%, and 14.9% of the National Health expenditure of France, Germany, Italy and the UK, respectively. However, they were underestimated because many blind people were not registered. Also, the total costs did not include allowances that should have been paid to non-registered persons.

PES13

A COST MINIMISATION ANALYSIS OF CUSTOM PAK® FOR CATARACT SURGERY

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OBJECTIVES: To compare the cost of disposable items used during cataract surgery with and without Custom Pak® in two French public centres. METHODS: Custom Pak® is a customised package that provides all the necessary disposable devices specified by a surgeon for cataract surgery in one sterile bag. An exploratory time and motion analysis of cataract surgeries at two well-known French public centres was carried out to compare operations performed with the customized versus regular set ups. The time and category of employees involved during the cataract surgery was recorded from the start to the finish of the operation. Moreover, the time costs of professionals was calculated from available information. The potential for increasing turnover to the hospitals was also estimated. RESULTS: The main time savings benefit with the Custom Pak® was observed during the preparation phase of the cataract surgical intervention. The mean time of surgical preparation was decreased by 10.45 minutes with a total time deceased of 16.15 minutes for the individual surgeon. The savings associated with this gain in time was estimated to be 17.63€ as compared with an incremental Custom Pak® cost of 11.30€. During one operating session of 4 hours, the Custom Pak® allowed the hospitals to perform 1.02 more cataract operations (n = 4.36 cataract operations without Custom Pak® and n = 5.38 cataract operations with Custom Pak®) and to increase the overall hospital turn-over by 1863€, that is, the amount paid for this extra cataract surgery to the public hospital at an additional costs of 61€ for Custom Pak® devices. CONCLUSIONS: Overall, the Custom Pak® increases the productivity and potential for turnover associated with performing cataract surgery. This increased turnover easily exceeds the extra cost of the customized package.

PES26

ANALYSIS OF RUSSIAN PHARMACEUTICAL MARKET OF ANTI-GLAUCOMA MEDICINES IN THE PERIOD 2000–2003

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OBJECTIVES: To analyze the prevalence of local antiglaucoma medicines in drug-store of Russia and to make the pharmaco-economic research on the base of large statistical selection. METHODS: In 2003, the total cost of antiglaucoma medicines sales in drug-stores of Russia was about 10.86 m USD. The beta-blockers took the first place ($7.0m or 64.4%). The pilocarpine analogue medicines took the second place. Their joint sales volume was $1.8 m or 16.7%. Two combined medicines Forotil and Fotil forte (Santen) were at the third place $1.2 m (10.7%). Latanopropt (Xalatan, Pharmacia-Pfizer) and Brinzolamide (Azopt, Alcon) began to be sold more active. The sales of the first, in 2003, were 3.8%. Azopt began to be sold only in 2002 and its results are $147,878.15 or 1.35% and in 2003—$289,265 (2.7%) The other CAI Trusopt (MSD) was pharmaco-economical in 2002 on $217,473.86 (1.99%) and in 2003 $184,713 (1.7%). The portion of all other medicines in 2002 was less than 0.5%. The average price of beta-blockers is 0.7–2.1, CAIs about $22; prostaglandins and their combination (Xalacom, Pfizer—sales started only in the end of 2002 year in Russian market) $25.6 and $26.9; combined form (timolol + pilocarpine) $5; pilocarpine $0.83 round the clock and the course of treatment during a one year is $11.92 (pilocarpine) $380.32 (Trusopt). RESULTS: The timolol maleate, pilocarpine