OTHER COST STUDIES

A MARKOV MODELLED PHARMACOECONOMIC ANALYSIS OF BIMATOPROST 0.03% (LUMIGAN®) IN THE TREATMENT OF GLAUCOMA OR OCULAR HYPERTENSI ON AS AN ALTERNATIVE TO FILTRATION SURGERY IN ITALY

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OBJECTIVES: Glaucoma is a condition affecting one or both eyes with raised intraocular pressure (IOP). IOP reduction can prevent or slow progression of visual field loss. The objective of the analysis was to investigate the four-year costs of bimatoprost 0.03% as an alternative to filtration surgery (FS) for glaucoma patients on maximum tolerable medical therapy (MTMT) in Italy. METHODS: A Markov model with monthly cycles based on effectiveness and resource-use data from a clinical trial and expert statements was designed. The trial covered 83 patients on MTMT. The model compared bimatoprost with FS. In one model-arm patients began treatment with bimatoprost. If a 30% reduction in IOP was not reached using mono-therapy the patient proceeded with combination-therapy and eventually FS. In the other model-arm FS was performed after the first ophthalmologist visit. In both arms treatment changes involved additional follow-up visits besides the scheduled, an increasing proportion needed pressure-lowering medication after FS and 40% were operated in both eyes. Unit costs were obtained from an Italian chart and tariffs review. The model analysed four-year costs from a national Health care sector perspective. A 5% discount rate was used. RESULTS: The 4-year cost per patient in the bimatoprost arm was €3372 with visit costs and medications contributing the most. In the FS arm four years costs were €4284 with the costs being driven by primary surgery, secondary surgery, and pressure-lowering medications needed post-surgery to control IOP. CONCLUSIONS: The analysis indicates that bimatoprost over a four year horizon is a cheaper alternative than FS. This result was strengthened by a threshold sensitivity analysis showing that the FS price would need to be reduced 73% before FS and bimatoprost were equally costly. Italian ophthalmologists should therefore consider bimatoprost as an alternative to FS.

BURDEN OF ILLNESS OF INFLUENZA

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OBJECTIVE: The purpose of this study was to determine the burden of illness of influenza in the United States. METHODS: Retrospective analysis was conducted of the 1999 portion of the Medical Expenditure Panel Survey. Data was collected from a nationally representative sample of 24,618 respondents and linked to data from respondents’ medical care and health insurance providers and employers. Data used in this study included medical conditions, use and payments for medical care, and employment information comprised of hourly earnings, hours worked, and disability days. Influenza patients were identified using ICD-9-CM codes (487.0–487.8). Direct costs were calculated using patient and third-party payments for influenza-related medical events. Indirect costs were calculated for influenza patients who incurred missed workdays using the human capital approach. Sample estimates were weighted and projected to the population and 95 percent confidence limits were calculated using the Taylor expansion method. RESULTS: Approximately 6.38% (95% C.L. = 5.86%–6.91%) or 17,640,761 individuals experienced influenza and 2.50% (95% C.L. = 2.22%–2.79%) or 6,920,976 individuals experienced influenza resulting in missed workdays. Total costs of influenza were $10,413,397,186. Direct costs were $1,251,588,028. Office-based medical provider visits represented the highest proportion of direct costs, at $407,049,515 (mean = $64.56; 95% C.L. = $54.45–$74.67). Home health care expenditures were $265 million. Expenditures for inpatient stays, prescription medications, and emergency department visits were similar, at $189 million, $185 million, and $175 million, respectively. Outpatient services represented the lowest proportion of direct costs, at $31 million. Indirect costs of influenza were $9,161,809,158 with mean indirect costs of $1,325 per patient (95% C.L. = $1,130–$1,521). CONCLUSIONS: Affecting more than 17 million individuals in the population with a total cost of $10.4 billion, the burden of illness of influenza was substantial. With indirect costs accounting for nearly 90% of total costs, influenza significantly impacts the labor force underscoring the importance of prevention to minimize absenteeism and maintain productivity.

INITIAL INSERTION OF A METAL STENT FOR PALLIATION OF MALIGNANT BILIARY OBSTRUCTION: A COST CONSEQUENCE ANALYSIS FOR ENGLAND, FRANCE AND SWEDEN

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OBJECTIVE: Placement of a biliary stent (plastic or metal) is a recognised palliative treatment for malignant biliary obstruction. Metallic stents have a lower occlusion rate and avoid reinterventions for exchange but are more expensive. The objective of this analysis is to compare the total costs at one year of metal versus plastic stent placement. METHODS: A Markov model with a time horizon...
of 12 months and cycle lengths of 1 month was designed to evaluate the cumulative costs over time of plastic and metal stent. A meta-analysis of all published randomised trials was performed to derive the transitional probabilities for first and second occlusion and for death. A national health care perspective was adopted. Unit cost data was obtained from available public sources in France, Sweden and England. Resource use was derived from expert opinions in each country. RESULTS: Initial procedural costs were higher with metal than with plastic stents: the cost difference was €953 for Sweden, €739 for France and €653 for England. However, due to fewer reinterventions for exchange, follow-up costs were substantially reduced with metal stents. In Sweden and England, the cost break-even point was after 4 months and for patients with longer survival, metal stents became cost-saving. In France, the break-even point was after 5 months. At 12 months, the difference per patient cost in favour of metal was €493 for France, €620 for England and €1002 for Sweden. CONCLUSION: This analysis demonstrates that initial metal stent placement can be a cost-saving strategy, especially if the patient survives more than 4 to 5 months. The higher procedural cost with a metal stent is offset by a reduction in re-treatment costs. Avoiding reinterventions will benefit patients in terms of quality of life and the health care system as a whole.

OBJECTIVES: With a prevalence of 10% asthma is the most common chronic disease among children and adolescents in Germany. Approaches to reduce the burden of asthma comprise patient education as a well-recognised and effective component that helps to improve self-management skills. We determined whether a continuous internet-based education programme (IEP) as an add-on to traditional education improves health outcomes of asthma patients (8–16 years) at a favourable benefit-cost ratio. METHODS: We performed a prospective cost-benefit analysis alongside a non-randomised trial. A total of 438 patients in 34 study centres in Germany were enrolled in the investigation. Study participants were assigned to a control group and two intervention groups. Patients in both intervention groups received traditional patient education. In one group patients received additional self-management education through the IEP for the duration of 6 months. At the initial visit and at 6 and 12 months health service utilisation data were collected. RESULTS: Utilisation of various Health care services (e.g. number of consultations, urgent medical examinations) decreased significantly in both intervention groups. In the first year after intervention traditional education realised morbidity cost savings of 333 EUR per patient. Adding the IEP provided incremental savings of €143. From a payer perspective, the benefit-cost ratio of the traditional education programme was 0.45. Adding the IEP improved the ratio (0.69). For patients with moderate or severe asthma the benefit-cost ratio were 1.07 and 1.42 (with IEP). In individuals who had experienced an emergency visit due to asthma 6 months prior to the study entry, the ratios were 1.11 and 1.21, respectively. CONCLUSIONS: As a supplementary to traditional asthma education programmes, the IEP offers the potential to realise incremental morbidity savings. Subgroup analyses demonstrated that within 1-year morbidity cost savings surpass the intervention costs in patients who belong to risk groups.

A HEALTH ECONOMIC EVALUATION OF N-3 POLYUNSATURATED FATTY ACIDS (PUFA) IN THE SECONDARY PREVENTION AFTER MI

OBJECTIVES: Patients who survived an acute myocardial infarction (MI) have an increased risk for subsequent major cardiovascular events and cardiac (often sudden) death. The use of highly purified omega-3 polyunsaturated fatty acids (n-3 PUFAs) in addition to standard secondary prevention after MI was associated with a significant reduction in risk of sudden death. Our study assessed the cost-effectiveness (CE) of adding n-3 PUFAs treatment to the current secondary prevention treatment after acute MI in Belgium. METHODS: Based on the clinical outcomes of the GISSI-prevenzione study (MI, stroke, revascularisation rate and mortality) a decision model was built in DataTM Pro. Adding n-3 PUFAs to standard treatment was compared to standard treatment alone in patients with a recent history of MI (age = 59 years) from the health care payer’s perspective. The time horizon of the model was 3.5 years (identical to the GISSI-prevenzione study). The cost of non-fatal events was based on Belgian literature data and the cost of cardiac death on a patient chart review (n = 60). The unit cost of n-3 PUFAs was €1.23. Life expectancy data for cardiac disease were obtained from published sources and adjusted to the Belgian population. Results are expressed as cost (€) per life year gained (LYG). RESULTS: Treatment with n-3 PUFAs results in 0.287 life years gained at