(patient severity), biochemical parameters (lipids, glucose, etc.) and cost model. The general morbidity charge was quantified beginning from Adjusted Clinical Groups (http://www.acg.jhph.edu). The program provides the utilization bands of resources (RUB, co-morbidities levels). It was considered fixed/semi-fixed cost structure/salary/services) and variable one (diagnostics/therapeutical requests, referrals, drugs). Logistical regression analysis was effected (procedure: enter) and the covariance (ANCOVA) for the correction of the models (procedure: Bonferroni), according to the recommendations of Thompson-Barber. Program SPSSWIN; $p < 0.05$. **RESULTS:** A total of 35,207 subjects ≥44 years were studied, 10.9% (95% CI: 13.3–15.1%) show osteoporosis (average aged: 62.5 ± 11.8 years; woman: 94.4%). The patients with osteoporosis presented main general morbidity (RUB: 2.9 ± 0.6 vs. 2.7 ± 0.7; episodes: 8.0 ± 4.5 vs. 5.7 ± 3.7), total cholesterol (213.2 ± 36.1 vs. 208.9 ± 30.9 mg/ml), visits (12.9 ± 10.9 vs. 9.6 ± 9.3) and polypharmacy (41.2% vs. 22.2%), $p < 0.001$. The osteoporosis had an independent association in presence from fracture (OR = 1.4), fibromyalgia (OR = 1.3), dyslipidemia (OR = 1.3), asthma (OR = 1.2), depression (OR = 1.2) y thyroid diseases (OR = 1.2), $p < 0.001$. The average unitary/total cost adjusted for year, gender and RUB was €1387.28 vs. €808.98; and the pharmaceutical of €1018.62 vs. €522.33; $p < 0.001$. All components of outpatient management costs were significantly higher in the osteoporosis group. Eighteen percent of the total cost was related to drugs. **CONCLUSIONS:** Patients with osteoporosis presented a high morbidity (general) and specific one, existing differences of gender (women), producing a high consume of sanitary recourses.

POSTER SESSION III

CONCEPTUAL PAPERS & RESEARCH ON METHODS—Clinical Outcomes Methods

PMC1

COLLECTING REAL DATA FROM REAL PATIENTS

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OBJECTIVES: 1) To assess the willingness of patients to provide information about medical treatment, and 2) to practically demonstrate that useful information can be collected **METHODS:** Public acceptability towards reporting side-effects and efficacy of medical treatments was assessed by 1) online questionnaire, and 2) assisted questionnaire. Results from the first 137 respondents to the on-line questionnaire and 115 respondents to the assisted questionnaire are reported. A total of 110 leaflets were distributed inviting patients to log on to a dedicated website and provide information on post-vaccination symptoms. Information was gathered on the day of vaccination, two days later and at day eight. **RESULTS:** A total of 94% of interviewees were aware of the possibility of side effects. Of interviewees who had personal experience of side effects, 39% did not report them. The perceived principle conduit (81%) for reporting was to the physician. The motivating factors for reporting adverse drug reactions (ADR's) in order of frequency was stated to be, ensuring medical safety of others (31%), ensuring their own future good health (28%) the advice of pharmacists/nurses (12%) and financial incentives if available (7%). A total of 73% reported willingness to report side-effects via the Internet. A total of 110 leaflets were distributed at an influenza vaccine clinic inviting patients to log on to an interactive website and provide information. 73 (66%) registered on the day of vaccination, 70 (96%) responded at day two and 66 (90%) at day eight. Statistics on pain and discomfort demonstrate that while the majority of patients have no pain, 8% experienced significant discomfort and 3% pain for greater than one hour. Of side effects reported, none required medical attention and the majority were self-limiting. **CONCLUSIONS:** We have confirmed that patients are willing to provide information about medical treatment via an interactive web-based system. This technique has potential for the conduct of naturalistic studies and for post-marketing surveillance.

PMC2

HAS THE QUALITY OF RANDOMISED CONTROLLED TRIALS INCREASED WITH TIME: AN ANALYSIS OF DATA FROM 5 SYSTEMATIC REVIEWS?

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OBJECTIVES: When conducting systematic reviews of randomised controlled trials (RCTs), an important step is to critically assess the quality of included studies. As emphasis on sound trial design has increased over the years, we sought to establish how quality of studies included in systematic reviews is associated with the publication year of those studies. **METHODS:** We analysed the studies included in 4 large, clinical systematic reviews of randomised controlled trials conducted by Heron in the last 6 months. These covered 4 disease areas: oncology, hyperlipidaemia, anaesthesia, and serious bacterial infection. The data extracted included a critical appraisal of study quality based on means of quality scales. These were the Jadad scale, which assesses randomisation, blinding, patient attrition and reporting quality and gives a score from 1 (low) to 5 (high), and the allocation concealment grade, which assess whether allocation to treatment was adequately concealed. We analysed trends in both Jadad score and allocation concealment grade by year of publication, with stratification by disease area. RESULTS: A total of 291 trials were included in the analyses from the 4 reviews. Most of these were carried out between 1981–2008. The average overall Jadad score was 2.3, suggesting low overall trial quality. Jadad score increased from a mean of 1.4 over the period 1981–1986 to 2.9 over the period 2001–2006. Furthermore there was an increase in the percentage of high quality (Jadad score 4–5) trials—from 6% in 1981–1986 to 36% in 2001–2006. Only 3% of RCTs from the period 1981–1990 recorded adequate allocation concealment; this increased to 26% over the period 1996–2006. **CONCLUSIONS:** There was an observable increase in trial quality over the period analysed. However, the mean Jadad score, and the proportion of trials with adequate concealment of allocation remained low, even by 2006, indicating the need for continued attention to study quality.

PMC3

OVERCOMING THE FINAL HURDLE: COMMUNICATING THE COST EFFECTIVENESS OF A NEW DRUG

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OBJECTIVES: Although effective post-approval communication is vital in building awareness in the clinical community of newly approved and recommended drugs, the development of such communications can often have a lower priority than supporting a drug through its formal regulatory submission. In this study we considered how standard Excel-based cost effectiveness models could be adapted to enhance communication of economic value. **METHODS:** Even with a clear and positive regulatory approval and recommendation, from groups such as National Institute for Health and Clinical Excellence (NICE), an additional hurdle is

often seen in effectively communicating this to treatment practices within the clinical community to the Primary Care Trust (PCT) level. Such delays can result in the continued prescribing of less cost-effective drugs. We, therefore, looked at several potential approaches to enhance communications through improved user interface capabilities of existing Excel-based models. Three approaches were considered, all utilising existing Windows-based tools and programming languages: HTML, Visual Basic, or HTML/Visual Basic (hybrid). **RESULTS:** We successfully developed a two-step methodology, based on a HTML/VisualBasic approach, which can be used to quickly develop sophisticated graphical user interfaces directly within the structure of an existing economic model. The advantage of this novel approach is that there is no longer a need to rely on full replications of models in a separate programming language (such as shockwave), which carries consistency issues, or the limited basic spreadsheet interface. Also, the approach can be applied iteratively during model design for submission to a regulatory body, which is a more efficient development process. **CONCLUSIONS:** A new method of presenting pharmacoeconomic results has been developed, which can be designed within existing Excel-based economic models, providing an enhanced, user-friendly, interactive tool which can replicate real-world prescribing patterns for a given scenario. These tools can greatly improve communications of economic and clinical messages to PCTs.

CONCEPTUAL PAPERS & RESEARCH ON METHODS—Cost Methods

PMC4

FEASIBILITY OF CONDUCTING BUDGET IMPACT ANALYSIS IN THE SOCIAL SECURITY INSTITUTION OF TURKEY

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OBJECTIVES: To determine whether the Social Security Institution of Turkey has an appropriate system to collect and process data in order to conduct budget impact analysis. **METHODS:** A literature review was conducted in order to specify the data needed for budget impact studies. Then, interviews with the personnel of the Monitoring and Evaluation Department and Pharmaceuticals and Pharmacy Department in the Social Security Institution were made. Besides, the literature concerning General Health Insurance MEDULA system was reviewed. Data was assessed in terms of its existence and accessibility. **RESULTS:** After using Web Electronic Bill System (w-ELF) in 2006, MEDULA was established in order to transfer data between health care settings and general health insurance system in 2007 in Turkey. Currently, patient characteristics such as age and gender, information regarding diagnosis, examination, consultation, analysis, operation, complications and pharmaceuticals and medical supplies used can be recorded via MEDULA. However, patients and number of patients who have a specific health condition or who use a certain pharmaceutical product cannot be determined via web services of the system. Similarly, costs paid for a specific medical treatment cannot be identified via MEDULA. On the other hand, it is indicated that there is a project to determine number of patients who have a specific health condition through the system. **CONCLUSIONS:** Although there is relevant raw data, number of eligible people with a specific indication, extent of implementation of a pharmaceutical and incremental cost per patient which are necessary for budget impact studies cannot be accessed through the existent system in the Social Security Institution of Turkey. Thus, some improvement in data processing is needed.

PMC5

A MISSING DATA THRESHOLD AS APPLIED TO HEALTH OUTCOMES DATA: DIFFERENTIAL IMPLICATIONS FOR COST-UTILITY ANALYSIS BY DIAGNOSIS

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OBJECTIVES: To determine a rule or the threshold beyond which missing data affects utility estimates, thus requiring resort to imputation techniques. This analysis examined UK data and is based on patient and payers' perspectives. This paper moves beyond the now established consensus against listwise and pairwise deletion of missing data toward comparably simple methods of analysis that achieve greater accuracy. **METHODS:** EuroQoL EQ-5D measurements of health utility obtained by survey of secondary care patients after hospitalisation were examined in order to develop missing data thresholds beyond which overall data quality would be compromised and thus imputation techniques required. Using gender, index age, length of stay in hospital, number of comorbidities, and cost of care, patients were stratified according to a primary diagnoses of 5 major chronic conditions, in terms of cost. Each dataset, consisting of between 150 and 450 patients, was randomly assigned missing values, based on two broad classes of randomness in the literature: missing at random data and not missing at random data. Not missing at random data was defined as data containing paired variables with correlation coefficients of great than 0.50. Comparisons among primary ICD-10 diagnoses set at 5%, 10%, 15%, and 20% were examined. The missing data threshold for each diagnosis was then calculated by model simulation using various degrees of missing data. **RESULTS:** For cardiovascular diseases, the missing data threshold was between 8.5% and 12%. Rates of missingness beyond these levels tended to decrease the accuracy of utility measures when compared with the full baseline dataset. For diabetes, chronic pulmonary disease, and muscular skeletal disorders, the range was lower. Therefore, for a given cost of care, cost-utility ratios decline due to the increase in uncertainty of the estimates. **CONCLUSIONS:** Descriptive measures of health status are affected by diagnosis and other factors. The development of a rule that enables researchers to determine whether missing data is likely to have a material effect on the measurement of health status can lead to improved research quality and, in turn, better allocation of health care resources.

PMC6

SOCIAL DISCOUNTING IN THE ECONOMIC EVALUATION OF HEALTH CARE PROGRAMMES

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OBJECTIVES: To provide a ready-to-use framework for computing the social discount rate, the proper rate for discounting of social programmes, including health care programmes, given the inoptimality of market mechanisms to derive the optimal discount rate. **METHODS:** A social time preference methodology derived from Feldstein work ("The derivation of social time preference rates", Kyklos 18, 1965) is applied to calculate social discount rates as social time preference (STP) rates across 167 countries for a specific year (2006) and across time from 2005–2050 for a country case (Brazil). STR rate derived is defined as $d_t = (1 + \pi_t)^{1-\alpha}(1 + \gamma t)^{\sigma}(1 + r) - 1$, where α is the population weight, π the population growth, γ the per-capita income growth, σ the coeffcient of risk aversion and r the pure time preference rate. Data were obtained in the literature and databases (World Development Indicators (World Bank, 2007), World Economic Outlook (IMF, 2007) and IBGE (Instituto Brasileiro de Geografia