Economic evaluation of vaccines

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private sector respectively in Germany and on the Medicare physician fee schedule in USA. In USA is very difficult to analyze physician's cost of production. In Spain regional outpatient tariffs are used as resource components without inclusion of health staff cost. **CONCLUSIONS:** Cost data availability is limited and varies widely. An improvement approach might be the creation of national database used as reference for cost assessment.

PRM17

ECONOMIC EVALUATION OF VACCINES: CONSIDERATIONS ON EVIDENCE, DISCOUNTING, MODELS AND FUTURES CHALLENGES

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OBJECTIVES: During the last decade, with the arrival of new innovative vaccines, there was a huge increase in the number of papers on economic evaluation of vaccination programmes. Our study had a 3-fold objective: 1) Appraise available methodological papers dealing with specificities of vaccines in term of health economics; 2) Illustrate the impact of each issue in term of decision-making process with concrete examples; and 3) Identify futures challenges. **METHODS:** A comprehensive literature search was conducted to identify methodological papers dealing with specificities of economic evaluations of vaccines. Each issue was illustrated with concrete examples of cost-effectiveness analyses recently performed for HPV vaccines, or pneumococcal diseases. **RESULTS:** Except guidelines issued in 2008 by the WHO and a few general papers, most of methodological papers focused on modelling techniques and showed a trend in using more and more sophisticated methods (e.g. calibration). Several papers highlighted the need for having strong dynamic transmission models of infectious diseases to evaluate appropriately the cost-effectiveness of vaccination programmes. Other papers focused on the issue of discounting, and showed the extreme impact of discounting for some vaccines given this long-term assessment, possibly warranting an alternative method of discounting for vaccines. Fewer papers highlighted the different type of clinical evidence compared with curative pharmaceutical drugs, in particular the need to model immunological responses into clinical endpoints of disease and short-term efficacy into long-term effectiveness. Although there is an increasing level of expertise in the field, other important issues such as the choice of realistic assumptions (coverage rates or vaccine prices) and the inclusion of externalities (i.e. changes in the epidemiology of the infection) are not well analysed. **CONCLUSIONS:** It is important for decision makers to keep in mind the above vaccine specificities when they assess the cost-effectiveness of new vaccination programmes in order to provide relevant conclusions.

PRM18

CONDUCTING PHARMACEUTICAL BUDGET IMPACT ANALYSES IN IRAN: IN ACCORDANCE WITH ISPOR TASK FORCE REPORT ON GOOD PRACTICE FOR BUDGET IMPACT ANALYSIS

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Increase in accessibility and affordability of health care services have been considered as important policy objectives since the beginning 1980s in Iran. However, current 60- 70% out-of-pocket payments creates a barrier to an equal access to quality health services especially in terms of new medicines. This affects equity issues and consequently the "health" in Iran. Currently, the quasi-government health insurance organizations considered as main budget holders or purchasers of medicines and health care services, do not consider comprehensive economic evaluations (Cost-effectiveness plus Budget impact analyses) for their reimbursement decisions. The present study is introducing a standard Budget Impact Analyses (BIAs) model for the first time in Iran. The main purpose is providing the health care budget decision makers with a practical tool improving resource allocation as well as accelerating and facilitating the process of pharmaceutical reimbursement decision making to address the problem of considerable out-of-pocket payments in Iran. In the current study, A literature systematic review was conducted on the international database pubmed to find: 1) Standard guidelines published for BIAs and 2) Empirical studies doing Pharmaceutical BIAs, published in English language since Jan 2000 to Dec 2011. Four international standard guidelines and 22 empirical studies on BIAs were reviewed to provide a comprehensive standard model for conducting BIAs. They also include practical examples for theoretical recommendations. Moreover, semi-structured interviews were also conducted to ask policy makers opinions about the necessity of doing BIAs in Iran's health care financing system as well as their opinions about the different parts of the proposed model. The final model consists of general and detailed recommendations which were extracted mainly from ISPOR task force report on Principles of Good Practice for BIAs and other reviewed guidelines. There also were recommendations made by Iranian policy makers which make the model much more practical for conducting standard BIAs in Iran.

PRM19

SOMETHING FOR NOTHING? THE VALUE OF INFORMAL CARE

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OBJECTIVES: Many individuals with long-term care needs rely on informal care to support them in their daily living. Although public authorities tend to see informal care as free, caring imposes significant costs on caregivers. However, measuring and valuing informal care remains a challenge partly due to the absence of clear guidelines on the topic and partly due to the lack of consensus among economists on the best methods to use. This review describes the methods used to measure and monetarily value informal care and discusses their advantages and limitations. **METHODS:** Review of: 1) the methods available to measure time; 2) methods available to value informal care time; and 3) application in published economic evaluations. **RESULTS:** Only the diary and the recall methods have been used in cost-effectiveness analysis, although direct observation and experience sampling may provide more accurate estimates of time use. The traditional methods to value time are the opportunity cost, proxy good and contingent valuation methods. Recently, the well-being method and applications of conjoint analysis to informal care have been developed. The value of informal care varies widely depending on the methods used. **CONCLUSIONS:** Informal care should not be viewed as costless or free since the time inputs into informal care generate costs borne by the caregiver and society as a whole. Failure to consider informal care may affect reimbursement decisions and shift costs to patients and their families. The monetary value of informal care can be estimated using existing methods. The clear advantage of using monetary methods is that results can potentially be included in cost side of any type of economic evaluations. However, different methods give different answers both in terms of time-use data and value of informal care. Clear guidelines are needed on the preferred methods to measure and value informal care time.

PRM20

EMPIRICAL ANALYSIS SHOWS REDUCED COST DATA COLLECTION MAY BE AN EFFICIENT METHOD IN ECONOMIC CLINICL TRIALS

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OBJECTIVES: To assess the validity of cost calculation from incomplete data collection and point out its consequence on bias and on precision of study results. **METHODS:** Over a one-year period resource use data from 234 elderly patients with myocardial infarction were collected quarterly. Applying unit costs, costs for each quarter were estimated. To examine different strategies of incomplete data collection, two different methods (inter-/extrapolation) with three different time frames (omitting quarter two and/or three) were applied and compared with complete data collection. Sample size was recalculated in response to the variation of cost estimates due to incomplete data collection. **RESULTS:** Sum of cost estimation from complete and incomplete data collection in the case of omitting information of quarter two or three showed no significant difference. When the time sampling included only 50% of the full information (omitting quarter two and three) costs were significantly lower by 3.9% (extrapolation) and 4.6% (interpolation). Generally, an increase in the standard deviation by 1% leads to an increase in sample size by 2% in the case of a single outcome. Thus, based on observed increased standard deviation due to incomplete cost collection a larger sample size by about 3% would be required. This would be efficient, since more time is saved due to incomplete data collection than extra time is required for additional patients. **CONCLUSIONS:** In economic evaluation, cost data can be collected efficiently by reducing frequency of data collection. This can be achieved by data collection for shorter periods (incomplete data collection) or extending recall windows (complete data collection). When applying the method of incomplete data collection, sample size calculation has to be modified due to increased standard deviation. This approach is suitable to enable economic evaluation with lower costs to both study participants and investigators.

PRM21

COMMUNICATING TO DECISION MAKERS THE PARAMETER UNCERTAINTY IN THE IQWIG EFFICIENCY FRONTIER APPROACH

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OBJECTIVES: The Institute for Quality and Efficiency in Health Care (IQWiG) developed—in a consultation process with an international expert panel—the efficiency frontier (EF) approach to satisfy the legal requirements for economic evaluation in Germany's statutory health insurance system. Here we evaluate established tools for assessing and communicating uncertainty in terms of their applicability to the EF approach and, where necessary, suggest adjustments to them. **METHODS:** Tools to dasplay uncertainty were applied to the EF approach with a simulated data set. The tools are (i) displays of overall uncertainty (scatter plots, confidence bands, contour plots); (ii) displays of uncertainty around the reimbursable price (confidence intervals, a modified cost effectiveness acceptability curve, the net health/ monetary benefit approach), and (iii) the ANCOVA approach. **RESULTS:** We found that, within the EF approach, the substantial implications of most tools was not always easy to interpret. Hence, we propose the use of price reimbursement acceptability curves or the net health benefit approach. **CONCLUSIONS:** This closes a gap for handling uncertainty in the economic evaluation approach of the IQWiG methods. However, the role of statistical testing in determining reimbursable prices is yet to be defined.

PRM22

THE HEADROOM METHOD OF EARLY ECONOMIC EVALUATION OF MEDICAL DEVICES: A USEFUL TOOL FOR DEVICE DEVELOPERS?

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OBJECTIVES: Consideration of the value presented to the health service by a new