Burdern of disease and economic evaluation: Are we investigating what it really matters?

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OBJECTIVES: We examined the association between economic evaluation studies performed in Spain in 1983-2008 and the burden of disease in the population.

METHODS: Cross-sectional observational study. Electronic databases (PubMed/ MedLINE, SCOPUS, BI Web of Knowledge, CRD, IME, IBECS) and reports from public and private sources were systematically reviewed. Inclusion and exclusion criteria and a set of variables were defined to analyze the characteristics of the papers selected. Using the Global Burden of Disease (GBD) study classification the following measures were calculated: years of life lost (YLLs), years lived with disability (YLDs), disability-adjusted life-years (DALYs), and mortality by cause. Correlation and linear regression models were used.

RESULTS: Cardiovascular diseases (15.7%), infectious and parasitic diseases (15.3%), and malignant neoplasms (13.2%) were the conditions most commonly addressed. Accidents and injuries, congenital anomalies, oral conditions, nutritional deficiencies and other neoplasms were the categories with a lowest number of studies (0.6% from the total for each of them). The disease sub-categories most prevalent in the studies were lower respiratory infections (5.7%), ischemic heart disease (5.7%), hepatitis B and C (3.3%) and HIV/AIDS (3.1%). For GBD categories (n = 20), a correlation was seen with: mortality 0.67 (p = 0.003), DALYs 0.63 (p = 0.003), YLLs 0.54 (p = 0.014), and YLDs 0.51 (p = 0.018). By disease sub-categories (n = 51), the correlations were low and non statistically significant.

CONCLUSIONS: There is a mid-moderate association of economic evaluations with the main causes of burden of disease. For some conditions, the data show over or under-representation of studies related to their burden generated. The burden of disease is a criterion that, in combination with efficiency and equity, would allow to set recommendations to guide debates on health research priority setting.

A NEORICARDIAN APPROACH TOWARD DISCOUNTING

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BACKGROUND: The major focus of the history of economic thought has been devoted to defining a scientific theory of value. An even harder task entails formulating a theory of intertemporal value. Work on this theory date back to the birth of modern economic thought. For example, some authors have argued that an intertemporal utility based theory of value involves the explanation of a quantity which can be directly observed and measured in terms of a quantity which cannot. Major current issues in discounting might be irrelevant by adopting a Neo-Ricardian view.

OBJECTIVE: We first derive a 2 matrix that relies only on empirical data. We find that the Ramsey discount rate, our results simplify to current economic theory.

THE CRRÉA STUDY

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OBJECTIVES: The objective of the CRRÉa study is to assess the total daily cost of a patient's stay in ICU in France. We present here preliminary results regarding the average time spent per patient by different health caregivers. METHODS: A prospective multicentric health economic study was performed in 23 ICUs of different French hospitals randomly selected from the PMSI database (French National Hospital database). RESULTS: A one day study, 5 adult patients were randomly selected among patients eligible for treatment, overestimated (30%) or underestimated (25%) market share, wrong assumption on 100% compliance (15%). CONCLUSION: This study has demonstrated large variances between predicted budget impact and actual expenditures on drugs. It also revealed significant weaknesses in the quality of submitted BIAs, e.g. in calculations, very limited data provided by manufacturer that unable to complete revision and reproduce figures in the calculation.
ventilated with a median SOFA score = 6. The median cumulated time dedicated to one patient by physicians, nurses and caregivers was 10h20 over the 24-hour period (1h15 by physician, 6h08 by nurses and 2h57 by caregivers). CONCLUSIONS: The median time of more than 10 hours directly dedicated to a patient is a key information for the estimation of the real cost of one day stay in ICU.

METHODS AND IMPACT OF INCORPORATING MEDICATION COMPLIANCE INTO PHARMACOECONOMIC EVALUATIONS

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OBJECTIVES: This study aims to identify how medication compliance and/or persistence were assessed in the cost-effectiveness analysis, and what the impact was on ICER (Incremental cost-effectiveness ratio). METHODS: Pharmacoeconomic studies with compliance and/or persistence measures, had published from March 2005 to February 2010, were searched through MEDLINE. Articles were included if they integrated medication compliance and/or persistence into the economic analysis model. We reviewed the target diseases, the model designs, and the impact of non-compliance on the treatment costs and effects. After that, the results were compared with a previous review article of ISPOR MCP (Medication compliance and persistence special interest group) had conducted in 2007. RESULTS: The search identified 77 articles, 11 of which were selected. Even though the overall kinds of target diseases were different, most of them were chronic diseases, which have remission and relapse as common characteristics. Varieties of modeling techniques such as decision-analysis and Markov model, DES (Discrete event simulation) were used for the evaluations. In decision-analysis models, the branches of decision trees represented different level of compliance. In case of Markov models, transition probabilities assumed to be higher for those patients who were non-persistent or non-adherent to treatment. Finally, considering the effect of compliance and/or persistence, it may cause decrease of ICER for new intervention. CONCLUSIONS: We found that incorporating compliance and/or persistence into economic evaluations lead to favorable results to new intervention. However, there was a lack of methodological rigor and consistency in definition. Therefore, development of guidance is needed for measurement, analysis, interpretation, and application of compliance and persistence from variety of data sources.

DISCOUNTING HEALTH EFFECTS: A REVIEW OF THE SYSTEM

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BACKGROUND: Discounting health effects remains a matter of great debate these days. Currently, discussion focuses on whether health effects should be discounted at the same rate as costs or not. High discount rates for health effects are impacting negatively on the cost-effectiveness of screening and vaccination programs. Discounting health at a lower rate than wealth has however been argued to result in theoretical inconsistencies and practical unnecessary delays in implementation of health programs. Many authors have therefore assumed that there is a one-to-one relationship between health and wealth. OBJECTIVES: We investigate the rationality of several assumptions involved towards current discounting procedures. We especially investigated the assumption of a one-to-one relationship between health and wealth. METHODS: We performed a literature review to link the issues in current methods of discounting health effects with the assumptions involved. Furthermore, we analyzed other possible linkages of health rather than with wealth only. RESULTS: We noticed that although income might depict the marginal substitution between all commodities, it seems that externalities are not accounted for. Yet, research has shown that all forms of economic growth exert intrinsically negative population health effects among the poor. Using instruments as the EuroQol-5D. These arguments support differential discounting of health effects, and potential further extensions such as differential discounting of wealth and health, it appears that externalities may play an additional role on the health effects as an interlinked system, rather than an equation with only health and wealth and allow differential discounting of, and potentially even within, health effects.

A NOVEL METHOD FOR COMBINING THREE CURRENT ESTIMATION APPROACHES TO PHARMACEUTICAL PRICING

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Three of the more common methods of estimating the optimal price for prospective pharmaceuticals are willingness-to-pay, value-based price appraisal, and reference price benchmarking assessments. Each method in itself, however, has inherent limitations. The objective of this study is to present a novel technique in pharmaecutical price estimation for arriving at an evidence based price-point. Willingness-to-pay, as assessed through primary research, is limited by lack of knowledge of product price, and the disconnect between respondent answers and real-life price acceptance. Value-based price appraisals, utilizing cost-of-treatment models to estimate the price at which new products are cost-effective relative to other options, are subject to error and interpretation and are rarely taken at face value by stakeholders who drive price acceptance. Reference price benchmarking, looking to market analogues to gauge appropriate price-points for new products, can be a good starting point but does not take into account unique product differences, perceived or real, of new products. To address gaps and weaknesses of any given individual method, our method of determining optimal product price uses all three pricing methodologies to triangulate a recommended price-point. Market analogues are used as a base-price starting point. A value-based cost-of-treatment model is used to determine potential cost-savings that can be offset in price. Finally, primary research is used to determine how to modify that price based on perceived differences in the target product, and the how cost savings might be considered in price.

CONCEPTUAL PAPERS & RESEARCH ON METHODS – Databases & Management Methods

PDC13

HOW DO THIN DEATH DATA COMPARE TO NATIONAL FIGURES FOR EACH UK COUNTRY?

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OBJECTIVES: Primary care patient data are increasingly used for research and record- ing of death is important as it helps define end of follow-up and mortality may be a study outcome. This study compared recording of death in a UK primary care database with national death rates for England, Wales, Scotland and Northern Ireland (NI).

METHODS: The annual number of deaths (1990 to 2008) for each country was collected after the mortality recording quality threshold from The Health Improvement Network (THIN) database. THIN holds longitudinal anonymised primary care medical records from an increasing number of practices over time and currently contains data from more than 450 practices throughout the UK. Annual age and gender specific person time was estimated and multiplied with annual age, gender and country specific death rates to derive the expected number of deaths. Observed deaths divided by expected deaths provided the standardised mortality ratio (SMR) and Byar’s approximation formula was applied to derive 95% confidence intervals (CI). An SMR close to 1.0 indicates that recorded deaths are near national rates.

RESULTS: The average annual number of practices was 263.5 (standard deviation (SD):80.2) for England, 18.8 (SD:8.5) for Wales, 33.6 (SD:17.0) for Scotland, and 14.0 (SD:7.6) for NI. Average annual death rate per 1,000 population in THIN was 10.41 (SD:1.05) overall, 10.38 (SD:1.02) in England, 11.25 (SD:1.45) in Wales, 11.03 (SD:1.54) in Scotland and 8.29 (SD:0.77) in NI. The average annual SMR was 0.88 (SD:0.02) overall, 0.88 (SD:0.02) in England, 0.94 (SD:0.03) in Wales, 0.94 (SD:0.10) in Scotland and 0.91(SD:0.07) in NI. CONCLUSIONS: The observed death rates were slightly lower than expected (SMR < 1) over time and in each country, especially in England. Social deprivation impacts death rates and as unadjusted for this could explain some variation. Reasons for lower rates need to be investigated further.

PDC14

ASSISTANCE COST DEPENDING ON COMORBIDITY IN PRIMARY CARE: A SPANISH INTERREGIONAL LEVEL


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OBJECTIVES: The objective of the study is to obtain behaviour of the cost’s relative average weights of the assistance with the retrospective application of the Adjusted Clinical Groups (ACGs) in 16 teams of Primary Care with an attended population in the clinical practice use. METHODS: Multicentre, retrospective study based on electronic records of patients seeking care during 2008 in the regions of Aragon, Balears and Catalonia. Main measurements: universal variables (age, sex, health service-family practice/paediatrics) and dependent variables: episodes and total cost (visits, diagnostic test, referrals, drugs). The ACG case-mix System software (version 8.2; N = 106) classified subjects into a single category for a given annual resource consumption. The model of cost per each patient was established differentiating the fix cost and the variable. Outlier patients were considered those surpassing T = Q3 + 1.5(QQ) = £1778.6 for total cost expenditure. Log transformation of the dependent variable was carried out to reduce skewness of the distribution and make it close to normal. Exploratory power was calculated by coefficients of determination (R²). Statistical software SPSS, P < 0.05. RESULTS: The study population was 227,235 (intensity of use: 75.6%), with an average 4.5 ± 3.2 episodes. The age average was 44.1 ± 23.7 years, 56.6% women (13.5% paediatrics). The distribution of costs was £146,657,137. The total unitary cost per patient/year £654.2 ± 517.1 (rela- tive weights of reference). Patient’s case-mix 37.2% of the studied population was grouped into 10 ACG. The explanatory power of the ACG classification system was 3.2% (Ln: 41.2%), P < 0.001. a total of 6.2% of patients were considered Outliers (N = 14,066). CONCLUSIONS: The ACG are an acceptable system of classification of patients in situation of clinical practice use. Some ACG classification categories should be separated due to the high outliers number.