ICER. In the case of panitumumab no data were available on progression of disease in the control group. The solution: progression free survival and survival after progression of the control group were drawn from the pivotal RCT and adjusted according to the survival observed in the control group of the outcomes research. Unadjusted RCT data resulted in an ICER that was approximately 20,000 euro/QALY higher. **CONCLUSIONS:** RCT data are often necessary to supplement missing data that cannot be collected through outcomes research, however the manner in which RCT data is used can have a profound effect on the resulting cost-effectiveness.

PRM12

JOINT ESTIMATION OF PROGRESSION FREE SURVIVAL AND OVERALL SURVIVAL

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OBJECTIVES: In cancer, treatments often aim to extend time to progression. The implications on overall survival are often inconclusive, as trials are too short and the majority of patients are still alive at the end of the trial. However, for decision making, it is important to estimate both the treatment effect on Progression Free Survival as well as the treatment effect on Overall Survival. This poster shows how the estimation of Overall Survival benefit can be improved by the use of Progression Free Survival data. **METHODS:** The developed Network Meta-Analysis model uses the tested hypothesis that treatments provided until progression in general do not change the length of the post-progression period. This hypothesis is tested in detail based on systematic literature reviews concerning 4 different types of cancer. A test for equal lengths of the post-progression periods is described too. **RESULTS:** A network meta-analysis model is described, which can be used to obtain estimates for OS from PFS data for treatments for which no OS data or insufficient OS data are available. This informs decision making in situations where otherwise no conclusion can be drawn. The methodology is applied to an indirect comparison of Chlorambucil, Fludarabine and Fludarabine Cyclophosphamide. Comparable DIC were obtained to individual fitting of OS and PFS for the situation that OS data were available. Therefore, the methodology both enables the fitting of OS when OS data are not available as well as potentially improves OS fitting when data are limited available. **CONCLUSIONS:** Based on systematic literature reviews, a method is developed to use PFS as surrogate outcome for OS. In addition, a test is developed to justify the assumption of equal post-progression periods among treatments, which can be used to assess whether the translation of PFS time differences in OS time differences is appropriate.

PRM13

METHODS FOR ESTIMATING SURVIVAL BENEFITS IN THE PRESENCE OF TREATMENT CROSSOVER: A SIMULATION STUDY

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OBJECTIVES: We aimed to assess statistical methods for adjusting survival estimates in the presence of treatment crossover in order to identify which are the most appropriate in a range of scenarios. Treatment crossover is a common issue in clinical trials of cancer treatments. Crossover occurs when patients in the control group switch onto the experimental treatment at some point during follow-up. In such circumstances an intention to treat (ITT) analysis does not address the decision problem faced by health technology assessment bodies, and will result in biased estimates of the overall survival advantage – and therefore the cost-effectiveness – associated with the experimental treatment. **METHODS:** We conducted a simulation study to assess the performance of crossover-adjustment methods in a range of scenarios. We purposefully ran scenarios that did not satisfy the specific assumptions made by the methods, in order to assess their sensitivities. **RESULTS:** Randomisation-based methods (eg Rank Preserving Structural Failure Time Models (RPSFTM) and Iterative Parameter Estimation (IPE)) were unbiased only when the treatment effect was not time-dependent. Observational-based methods (eg Inverse Probability of Censoring Weights (IPCW) and Structural Nested Models (SNMs) with g-estimation) coped better with time-dependent treatment effects but are heavily data reliant, are sensitive to model misspecification and often produced high levels of bias in our simulations. Observational-based methods are particularly sensitive to the proportion of control group patients that crossover whereas randomisation-based methods are not. **CONCLUSIONS:** Currently available randomisation-based and observational-based methods for addressing treatment crossover have important limitations. However, in most circumstances they are likely to lead to lower bias than an ITT analysis, given the decision problem faced in an economic evaluation. Analysts should consider the treatment crossover mechanism, the control group crossover proportion, the treatment effect associated with different patient groups, and data availability when deciding which method to use to address treatment crossover.

RESEARCH ON METHODS - Cost Methods

PRM14

EUROPEAN ASSESSMENT OF THE VALIDITY OF THE QALY OUTCOME MEASURE: RESULTS FROM THE EXPERIMENT CONDUCTED BY THE ECHOUTCOME PROJECT

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OBJECTIVES: Some European health authorities such as the National Institute of Clinical Excellence in the UK have published Health Technology Assessment (HTA) guidelines, which recommend the use of the Quality Adjusted Life Years (QALYs) outcome measure as the reference case. The ECHOUTCOME project is an interdisciplinary European research platform funded by the seventh Framework Program of the European Commission which objectives are to assess the validity of the QALYs for its potential use in cost effectiveness analysis (CEA) in European countries and proposing new European guidelines for conducting CEA studies. **METHODS:** Over a period of 3 months, a total of 1,200 students from Belgium, France, Italy and the UK answered hypothetical health states in which the health states and time in a given health states were varied in order to test for: von Neumaniann-Morgesten assumptions, mutual independence in utility, and the relevance of the multi-linear multi-attribute utility theory, which are the basis for the QALY calculation, as currently performed in the HTA literature. **RESULTS:** The preliminary findings of the experiment provided strong evidence that utilities obtained by varying the health states and the duration of a given health state fail to comply with the theoretical basis of the QALY. **CONCLUSIONS:** The results suggest that the underlying assumptions of the QALY calculation model are not in line with behavior from a real life population, implying that the QALY outcome measure might not be a valid measure for supporting health decision making in Europe. The findings of this first European experimental survey testing the validity of the QALYoutcome measure should be considered by European member states before recommending such approach in HTA guidelines.

PRM15

ASSESSING THE BROADER IMPACT OF VACCINATIONS: A GOVERNMENT PERSPECTIVE QUANTITATIVE ANALYTIC FRAMEWORK APPLIED TO VACCINATION

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OBJECTIVES: The World Health Organisation (WHO) Guide to Identify the Economic Consequences of Disease and Injury described the financial burden of poor health for government both in terms of increased transfer costs and lost tax revenue due to reduced productivity. To evaluate the broader consequences of rotavirus we developed a quantitative "government perspective" framework to evaluate immunisation costs in Ghana. **METHODS:** Methods from generational accounting, human capital economics and epidemiologic modelling were combined to estimate the benefits of rotavirus vaccination in terms of measures used in financial analyses such as the Net Present Value (NPV) and Return on Investment (ROI). Data from the published literature and national statistical sources were collected. Single and multiple cohort models were developed simulating survival, direct medical costs and average lifetime fiscal transfers between the government and individuals with and without the vaccination until the age of 65 years. Direct and indirect tax rates were linked to differences in lifetime age-specific earnings to quantify the tax revenue associated with vaccinated and unvaccinated individuals. **RESULTS:** From a "government perspective" the results showed that every dollar invested on vaccination against rotavirus, may yield a discounted gross tax ROI equal to $2.9 and a net tax ROI of $0.55. The vaccinated and unvaccinated cohorts resulted in total lifetime discounted net tax of -$167 million -$174 million, for the vaccinated and unvaccinated cohorts, respectively. The results suggested a net fiscal benefit of approximately $7million and $54 million for the single and multiple birth cohorts, respectively. **CONCLUSIONS:** Vaccinating against rotavirus may result in considerable fiscal benefits. Investments in vaccinations may influence future government tax revenue and thus contribute to the sustainability of tax-financed health systems, public finances and economic growth. Estimating the broader economic impact of vaccines using the "government perspective" framework may inform cross-sectoral governmental resource allocation decisions.

PRM16

ACCESS TO COST DATA CAPTURE USING PUBLIC DATABASE, WEBSITE AND LITERATURE IN GERMANY, FRANCE, SPAIN AND USA

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OBJECTIVES: There is a great heterogeneity across health economic studies with regard to claim of cost inputs making comparison of costs complicated. Objective was to analyze data availability, corresponding limitations and improvement approaches. **METHODS:** We evaluate the availability of cost data capture for Germany, Spain, France and USA. In Germany data from the Hospital Remuneration, the German Hospital Society (DKG) and the two outpatient tariffs were considered as well as Medicare, Medicaid and HCUP databases for USA, Database of Ministry of Health and regional/national official bulletins for Spain and lastly data from SNIRAM (Social Security information system) and PMSI (Programme de médicalisation des systèmes d'information) for France. **RESULTS:** DRG database in Germany and USA reflect the reimbursement level more than real cost per indication. Fragmentation of these costs is not possible. The DKG normal tariff (DKG-NT) is listing detailed procedures and services used for example for reimbursement between two hospitals. The Spanish inpatient cost data are difficult to collect due to the prospective hospital global budget; health authorities publish annually DRG and outpatient procedure tariffs as reference of their own resources cost. In France SNIRAM data is limited to Social Security own needs. In contrast publicly available PMSI data allows inpatient information tracking related to specific medical procedure use.Regarding outpatient setting, the physician fee schedule is based on the Uniform Evaluation Scale (EBM) and the medical fee schedule (GOÄ) for SHI and