mortality in patients with hypertension, type 2 diabetes and microalbuminuria. Three strategies were compared: early use of irbesartan (begun in subjects with microalbuminuria), late use of irbesartan (begun only in subjects with nephropathy), and standard hypertension care (with comparable blood pressure control). The model was based on data from the Irbesartan in Reduction of Microalbuminuria-II study and the Irbesartan and Diabetic Nephropathy Trial. Both studies demonstrated significant reductions in the progression of diabetic renal disease. ESRD-related costs and outcomes were retrieved from the French-specific published or official sources. Cost savings and life years were saved for a hypothetical cohort of 1000 subjects with baseline age 58 years. Future costs and LE were discounted at 3% yearly. A 25-year time horizon and third party payer perspective were used. Extensive sensitivity analyses were performed. RESULTS: When compared to standard care, early use of irbesartan in 1000 subjects was projected to save €25.7 million (95%CI 16.8–32.3), while late use of irbesartan was projected to save €9.2 (3.4–14.1) million. Similarly, early use of irbesartan was estimated to add 796 (520–1050) life years, while late use of irbesartan added 60 (22–92) life years. The superiority of early use of irbesartan over late use and standard care was robust under a wide range of plausible assumptions. CONCLUSIONS: Treating patients with hypertension, microalbuminuria and type 2 diabetes with irbesartan was projected to extend life and reduce costs. Late use of irbesartan (when overt nephropathy develops) is also better and less costly than standard care, but irbesartan should be started earlier and continued long-term.

MAKING EVALUATIONS WORK

ME1

ASSESSING GENERALISABILITY OF COST-EFFECTIVENESS ESTIMATES IN MULTINATIONAL STUDIES: APPLICATION TO A TRIAL OF MOXIFLOXACIN IN COMMUNITY-ACQUIRED PNEUMONIA (CAP)

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OBJECTIVES: Multi-country trial-based cost-effectiveness analyses often assume that resource utilisation and clinical efficacy are not country-specific, and apply country-specific unit costs. We applied econometric methods to estimate country-specific cost-effectiveness, adjusting for differences in incremental resource utilisation and case mix across countries. Results with and without adjustment are compared and methods described. METHODS: The TARGET multinational trial compared cure within 21 days for patients with CAP between sequential IV/PO moxifloxacin monotherapy and standard comparators. Unit costs were available for 4 countries (France, Germany, Spain, UK) among 10. A previously published framework, based on a system of regression equations, was used to determine treatment impact on resource use and outcome by country, controlling for baseline characteristics. Clinical efficacy was held constant across countries, but the impact of cure on resource utilisation was allowed to vary. Bootstrapping was also used to estimate uncertainty around country-specific cost-effectiveness results. RESULTS: No significant inter-country variation in clinical efficacy was observed (p = 0.9843). Treatment increased the probability of cure by 5% and the impact of cure on resource use varied significantly across countries (p < 0.0001). However between-country differences in incremental resource utilisation were not detected statistically (p = 0.7759) so that unadjusted analysis was also a possible approach. Using country-specific unit prices, average incremental costs per patient non-adjusted and adjusted were €–266 and €–436 for Germany, €–381 and €–543 for France, €–281 and €+126 for Spain, €–360 and €–1192 for UK. The probability that moxifloxacin is cost-saving was 97% for Germany, 95% for France, 90% for Spain and 87% for the UK in the non-adjusted analyses compared to 99%, 66%, 41% and near 100%. CONCLUSIONS: Where study treatments impact resource use differently across countries or country-specific CEA is desired, adjusted results can differ substantially. Although improved country-specificity is associated with increased variation in cost, country-specific cost-effectiveness measures may be more informative.

ME2

A USER-FRIENDLY TOOL FOR EVALUATING AND IMPROVING THE TRANSFERABILITY OF ECONOMIC EVALUATION RESULTS BETWEEN COUNTRIES

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OBJECTIVE: Development of a user-friendly tool for the evaluation and improvement of the transferability of economic evaluation results. METHODS: We systematically identified the factors that may influence the transfer of study results and investigated the way they impact transferability. A transferability decision chart was developed that includes knock out criteria, a checklist based on the transferability factors, and methods for improving transferability and for assessing the uncertainty of transferred results. The decision chart was applied to various international cost-effectiveness studies. RESULTS: Economic evaluation results can be transferred pending the outcomes of the transferability check and necessary adjustments. The influence of differences of most transferability factors can be estimated via the key health economic determinants capacity utilization, effectiveness, productivity loss and returns to scale. Depending on the results of the transferability check an adjustment of the study results for inflation and for differences related to currencies or purchasing power might be sufficient. Otherwise,
modeling based corrections might be necessary for which the (re)-building of the study model is required. Univariate sensitivity analysis seems appropriate for identification of the most important adjustments. If not all relevant study parameters can be substituted with country specific ones, multivariate or probabilistic sensitivity analysis appears to be a promising way to quantify the uncertainty associated with a transfer. If study results cannot be transferred, the transfer of study models or designs should be investigated as this can save a substantial amount of time when conducting a new study. CONCLUSIONS: The transferability decision chart is a transparent and user-friendly tool for evaluating and improving the transferability of economic evaluation results. For the assessment of transferability, a detailed method description in the original study is necessary. In addition, the relevant data should be presented in a non-aggregated manner for enabling modeling adjustment.

ME3

ESTIMATING COST-EFFECTIVENESS IN THE ABSENCE OF HEAD-TO-HEAD CLINICAL TRIALS—EXAMPLES OF TWO RECENT TECHNOLOGY ASSESSMENTS FOR NICE

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OBJECTIVES: In making decisions about which health care interventions to reimburse, cost-effectiveness analyses should directly compare all relevant treatment alternatives based on all available data. “Head-to-head” clinical trials directly comparing all treatment alternatives are seldom available, requiring the use of indirect trial evidence to make the required comparisons. We illustrate the use of formal methods to make such comparisons using two recent cost-effectiveness analyses commissioned for the National Institute for Clinical Excellence (NICE). METHODS: The clinical trial evidence available to inform the evaluations consisted of a mixed set of comparisons, such as drugs A vs. B, B vs. C, A vs. D. The model parameters required to perform the required direct comparison of the drugs (A vs. B, vs. C) were estimated jointly from the available data using a generalized linear model in a Bayesian hierarchical framework. This was implemented using Markov Chain Monte Carlo techniques. RESULTS: Direct comparisons of 9 anti-epilepsy drugs and 5 drugs for the acute-manic episode in bipolar disorder were undertaken based on data from 27 and 7 trials, respectively. In epilepsy, the analysis showed that, above a cost-effectiveness threshold of £20,000 per QALY, the newer adjunct therapies were likely to be cost-effective, although there was considerable uncertainty in these results. In bipolar disorder, olanzapine was cost-effective above a threshold of £7000 per responder. The use of this analytical approach avoided the need to restrict the analysis solely to the pairwise treatment comparisons made in existing trials. Cost-effectiveness acceptability curves were derived which incorporate the additional uncertainty associated with the observed heterogeneity between trials. CONCLUSIONS: The use of formal analysis of mixed treatment comparisons is likely to play an important role in reimbursement decisions. Further research is needed into how additional uncertainty associated with unobserved heterogeneity can be incorporated into cost-effectiveness models.

ME4

HOW FREQUENTLY ARE ECONOMIC EVALUATIONS USED IN DECISION MAKING?

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OBJECTIVE: To estimate actual use of benefit/risk and benefit/cost outcomes in health systems decision making. METHODS: Respondents were selected from public and private payers, provider organizations, technology firms, regulatory agencies and universities in France, Sweden, UK and US. A survey questionnaire was developed and pre-tested with 15 people. After modification, the survey was administered to 116 selected people. We asked about actual use, and examples, by them and their organization of results from benefit/risk and benefit/cost evaluations in making decisions on acceptance or rejection of new, and delisting current, health care technologies. RESULTS: A total of 104 (89.7%) respondents completed the survey. Every organization clearly used benefit/risk results in making decisions about accepting, using, rejecting and deleting technologies. Surprisingly, nearly every organization also used economic outcomes to help make decisions. Such results may not have always been formal benefit/cost evaluations (i.e., about 50% used budget impact primarily) but there was at the least the recognition about making trade-offs of benefits and costs among alternatives. CONCLUSIONS: These results are contrary to other published studies, based mainly on opinions and perceptions that found little use of economic analysis in health care decision making. Post hoc studies of actual decisions made in UK, Australia of formal analyses, and in Canada of less formal methods, confirmed use of benefit/cost results. Measuring actual behavior on use of economic outcome evaluations in health care decision making provides different answers than soliciting opinions and perceptions of others’ use of these results.

SESSION III

QUALITY OF LIFE OUTCOMES I

QL1

HEALTH-RELATED QUALITY OF LIFE IMPROVEMENTS IN AN EVIDENCE-BASED ASTHMA DISEASE MANAGEMENT PROGRAM

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