multiple courses of TACE is difficult to ascertain since additional courses may be prescribed under a patient-specific treatment protocol or due to non-optimal tumor response. Nonetheless, mean survival after discontinuing TACE was relatively similar regardless of number of treatments received.

POTDUM SESSION I: CONCEPTUAL PAPERS

CP1 ADJUSTING FOR INFLATION IN ECONOMIC EVALUATIONS OF HEALTH TECHNOLOGIES: ARE WE DOING IT WRONG?

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OBJECTIVES: Economic evaluations of health technologies typically require consideration of time. Conventionally, all costs are represented in ‘real terms’ by adjusting for inflation. Future costs are then discounted to account for time preference. Although much has been written on the practice of discounting, health economists have paid surprisingly little attention to the issue of appropriately adjusting for inflation. This paper argues that the conventional approach to adjusting for inflation in economic evaluations of health technologies is inappropriate. METHODS & RESULTS: The conventional approach follows the recommendations of the Washington Panel: costs must be converted to “constant dollars” using a single inflation rate representing the rate of “general price inflation”. However, “if the prices of the goods in question change at a rate different from general price levels, this variation should be reflected in the adjustment used”. Some analyses therefore use the ‘Medical Component’ of the Consumer Price Index (CPI), or an equivalent measure. For this reason, the conventional approach to be appropriate requires that all costs change at the same rate over time. This is generally not the case – some costs may rise (e.g. pharmaceuticals) at the same time as other costs fall (e.g. personal computers). In particular, products losing patent protection can experience a sudden fall in price out-of-line with general price inflation. It is not as simple as adjusting these costs using a single inflation rate. Instead, models often utilize a unique projection model for each cost component. CONCLUSIONS: The conventional approach to adjusting for inflation is inappropriate. A solution is to estimate a unique time profile for each cost component. Models routinely used by financial analysts may provide an example for how this projection can be done in practice.

CP2 THE NOTION OF REPRESENTATIVE LANGUAGES IN THE CONTEXT OF TRANSLATABILITY ASSESSMENT

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BACKGROUND: While current best-practices in PRO development include evaluation of the relative ease of translation for global trial use prior to instrument finalization, methodologies for this translatability assessment (TA) vary greatly. In the proposed approach, representative languages (RLs) are selected to assess the translation difficulty of PRO concepts without the time and cost of evaluating multiple languages with shared characteristics. METHODS: In the genealogical approach employed by linguists, languages sharing a common ancestor that become separated by geographical or socio-political boundaries will evolve in distinct ways, resulting in sets of languages (families) with common linguistic features (e.g. word order, phrasal structure, morphology, lexical items, etc.). Because of this relative similarity within language groups, efficiency can be gained by assessing translatability with sets of appropriately selected representative languages, which can in turn predict translation problems likely to affect others in their linguistic families. As such, use of appropriate, selected RLs is of key importance. Selection of RLs should be based both on linguistic properties and other features salient to outcomes research. A family or group of languages may also be defined by shared characteristics that are not purely linguistic in nature. Features such as geographic and cultural (religion/dietary/social) aspects, number and distribution of speakers worldwide, and criteria related to health care utilization or study implementation should be considered in the definition of language families/groups and in the selection of RLs. CONCLUSIONS: Despite differences that undeniably exist between individual languages, limited information can be gained by the repetitive assessment of prospective translation difficulty within groups sharing similar characteristics. Instead, the use of a representative language to assess translation difficulty for a related group of languages provides greater resource efficiency and more effective application of TA in providing important feedback prior to finalization of newly developed measures.

CP3 PIECEWISE MODELING OF TIME-TO-EVENT DATA WITH FLEXIBLE PARAMETERIZATION OF COVARIATES AND EFFECTS

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Projection of time-to-event distributions is necessary to obtain accurate estimation of life expectancy, or prediction of event times for economic models. Parametric survival analysis techniques are typically used, and can represent a broad range of shapes. In some cases, however, the best distributional fit fails to capture the variation in hazards over the entire time span, or it provides acceptable fit to the data but yields clinically implausible projections (e.g., constant hazard of death). More flexible techniques, like piecewise-exponential models, can overcome these issues but remain generally underused. In piecewise models, the time axis is divided into contiguous segments with a common parametric distribution assumed within each segment, but values of the parameters are allowed to vary. In addition to greater flexibility, this framework allows inclusion of time-dependent parameters to model time-dependent effects. Two important considerations are the number and placement of divisions on the time axis, and the choice of the common distribution. Examination of the cumulative and log-cumulative hazard plots with these issues. For instance, the number/placement of divisions for a piecewise-exponential model could be determined visually such that the points within each division of the cumulative hazard plot follow a linear pattern. The same can be done with log-cumulative hazard function for a piecewise-Weibull model. Although piecewise-exponential models can be made progressively more flexible by increasing the number of segments to capture even very complex patterns, the hazard for the last segment can still not be consistent for the multiplicative effect. Thus, models based on Weibull distributions may be more appropriate, and possibly achieve similar fit with fewer segments. The orthogonal selection of appropriate criteria for the selection the RLs is of key importance.

CP4 MEASURING HEALTH OUTCOMES IN THE ABSENCE OF RIGOUR: WILLFUL IGNORANCE OR DELIBERATE MALPRACTICE?

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Evaluations of cost-effectiveness plays a central role in appraisal of new technologies undertaken by regulatory agencies across the world. As a consequence, health economists now play a critical part in generating the evidence base used to determine both access to and the price of treatment. No matter the complexity of any technology evaluation, it is essential to describe and value the benefits of health care interventions. The computation of an ICER depends totally on the capacity to quantify marginal changes in health outcomes. The orthodoxy in health economics is to rely on the notion of capturing such outcomes via the use of generic health status measurement systems (for example HUI or EQ-5D) together with their corresponding social preferences weights. The requirement that the values of the general population constitute the “correct” perspective is one element of the health economics credo. A second dictates that the “worth” of a health outcome shall be expressed in terms of utility – a concept that lacks a defined unit of measure or any agreed standardisation method. What is a regrettable fit to a health economist’s criteria for the conventional approach to adjusting for inflation in economic evaluations of health technologies is inappropriate. METHODS: The conventional approach follows the recommendations of the Washington Panel: costs must be converted to “constant dollars” using a single inflation rate representing the rate of “general price inflation”. However, “if the prices of the goods in question change at a rate different from general price levels, this variation should be reflected in the adjustment used”. Some analyses therefore use the ‘Medical Component’ of the Consumer Price Index (CPI), or an equivalent measure. For this reason, the conventional approach to be appropriate requires that all costs change at the same rate over time. This is generally not the case – some costs may rise (e.g. pharmaceuticals) at the same time as other costs fall (e.g. personal computers). In particular, products losing patent protection can experience a sudden fall in price out-of-line with general price inflation. It is not as simple as adjusting these costs using a single inflation rate. Instead, models often utilize a unique projection model for each cost component. CONCLUSIONS: The conventional approach to adjusting for inflation is inappropriate. A solution is to estimate a unique time profile for each cost component. Models routinely used by financial analysts may provide an example for how this projection can be done in practice.

CP5 THE NOTION OF REPRESENTATIVE LANGUAGES IN THE CONTEXT OF TRANSLATABILITY ASSESSMENT

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BACKGROUND: While current best-practices in PRO development include evaluation of the relative ease of translation for global trial use prior to instrument finalization, methodologies for this translatability assessment (TA) vary greatly. In the proposed approach, representative languages (RLs) are selected to assess the translation difficulty of PRO concepts without the time and cost of evaluating multiple languages with shared characteristics. METHODS: In the genealogical approach employed by linguists, languages sharing a common ancestor that become separated by geographical or socio-political boundaries will evolve in distinct ways, resulting in sets of languages (families) with common linguistic features (e.g. word order, phrasal structure, morphology, lexical items, etc.). Because of this relative similarity within language groups, efficiency can be gained by assessing translatability with sets of appropriately selected representative languages, which can in turn predict translation problems likely to affect others in their linguistic families. As such, use of appropriate, selected RLs is of key importance. Selection of RLs should be based both on linguistic properties and other features salient to outcomes research. A family or group of languages may also be defined by shared characteristics that are not purely linguistic in nature. Features such as geographic and cultural (religion/dietary/social) aspects, number and distribution of speakers worldwide, and criteria related to health care utilization or study implementation should be considered in the definition of language families/groups and in the selection of RLs. CONCLUSIONS: Despite differences that undeniably exist between individual languages, limited information can be gained by the repetitive assessment of prospective translation difficulty within groups sharing similar characteristics. Instead, the use of a representative language to assess translation difficulty for a related group of languages provides greater resource efficiency and more effective application of TA in providing important feedback prior to finalization of newly developed measures.