

there has been little research in the field of economic evaluation, and no generic standardised frameworks exist. The objective of this research was to identify CM frameworks in non-economic evaluation fields, and to analyse these frameworks for common steps that would inform the development of a CM framework for economic evaluation. **METHODS:** After an initial scoping exercise using pearl growing techniques, a qualitative critical interpretive synthesis (CIS) approach was used to identify frameworks and synthesize results. CIS uses an iterative approach to search a range of sources, followed by an evolving selection and synthesis process to add to the research. Web of Science was purposefully searched to identify CM frameworks, broad inclusion criteria included CM frameworks with discrete steps, references and citations were examined. Alongside this a site-ation search was carried out to identify non-academic frameworks. An iterative data extraction process identified common steps in the frameworks, these were analysed and used to inform a framework for economic evaluation CM. **RESULTS:** Fifteen frameworks were identified from disciplines including ecology and engineering. Regardless of the discipline, similar steps were identified in each framework, ranging from two to nine steps. Using these steps, a CM framework for economic evaluation is proposed, split into three broad sections: understanding the problem (including: choose project team, objectives and outputs), model content (including: review previous conceptual models, scope and detail) and documenting the conceptual model (including review/refine, validation and assumptions/simplifications). **CONCLUSIONS:** Using steps from non-economic evaluation frameworks has informed a CM framework proposed for use in economic evaluation. The next stage in this research is to validate the framework with expert opinion and case studies.

#### PRM136

##### ECONOMIC EVALUATION OF ANAFERON® IN THE TREATMENT OF ACUTE RESPIRATORY INFECTIONS IN MEXICO

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**OBJECTIVES:** Respiratory tract infections are one of the society's main health problems due to the high rate of hospitalization, morbidity and mortality. Despite the overall impact on human health, there are relatively few therapeutic options available to prevent or treat respiratory infections. Children can present between six and eight respiratory infections per year, many of which, especially those occurring during the infant period, affect the lower respiratory tract. Anaferon® (affinity-purified antibody to interferon gamma) promotes an immunomodulatory and antiviral action. Its efficacy in relation to acute viral respiratory infections has been established clinically and experimentally. The objective of this study is to conduct a cost-effectiveness analysis of Anaferon® for the treatment of acute respiratory infections in children and adults compared with standard treatment. **METHODS:** This study used a decision tree, in which the costs and effectiveness of two treatment strategies in patients with acute respiratory infections (children or adult) were compared: Anaferon® plus standard care vs standard care (consultation plus treatment for the symptoms). The time horizon is six months. **RESULTS:** Adding Anaferon® to the standard therapy is a cost-effective strategy over standard therapy, the incremental cost is \$198 USD (\$58 USD vs \$360 USD). The administration of Anaferon® significantly reduced the duration of all the symptoms of the disease (4.68±0.08 vs 6.78±0.22 days). The duration in days of each symptom: fever (2.10±0.06 vs 3.37±0.19), intoxication (2.68±0.08 vs 4.63±0.19), cold symptoms (4.33±0.10 vs 6.79±0.23), gastrointestinal tract disorders (3.29±0.12 vs 4.65±0.26). For most of the children who received Anaferon® (81%) all the symptoms improved in 5 days vs 8 days for standard therapy alone. **CONCLUSIONS:** Anaferon® is a cost-effective alternative, it produces an immunomodulating effect, stimulates synthesis of IgA and IgG, exhibits cytoprotective activity, and improves local immunity of the upper airways in children and adults diagnosed with acute respiratory infections.

#### PRM137

##### HIERARCHICAL BAYESIAN MODEL ACCOUNTS FOR HETEROGENEITY IN ONCOLOGISTS' STATED PREFERENCE ON VARIOUS BREAST CANCER TREATMENTS

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**OBJECTIVES:** Traditional stated-preference models with fixed effects assume that individuals behave similarly. However, empirical evidence has shown that individuals' preferences are often diverse. Hierarchical Bayesian models that include random effects provide individual-specific utilities to account for heterogeneity. This research studies oncologists' choices about various pharmaceutical therapies for patients who have metastatic breast cancer. **METHODS:** In this discrete choice experiment conducted in Lima, Peru, each of 113 oncologists was presented with 11 choice tasks (each consisting of four scenarios of therapies plus the NONE option) and asked to pick the best choice. The attributes included Treatment Scheme, Patient Recovery Status, Treatment Length, Cost, and Risk Factors. Hierarchical Bayesian methods were used in this multinomial logit conjoint analysis to account for heterogeneity in preferences. **RESULTS:** Treatment Scheme, Recovery Status, and Risk Factors showed impact on the choices. On average, treatments with shorter periods of follow-up medication were preferred, and these oncologists tended to choose therapies that would have a better recovery status (0.19 with a 95% HPD credible interval [0.06, 0.33]). More importantly, Risk Factors had a large influence: the utility estimates of all risk factors were all negative (cardiovascular disease -1.21 [-1.56, -0.86], thromboembolism -1.45 [-1.81, -1.11], arterial hypertension -1.44 [-1.78, -1.11]). Cost did not play a role, probably because the respondents were doctors (not patients) and the study dealt with metastatic breast cancer. Several entries in the covariance matrix of random effects were large, indicating diversity in preferences. **CONCLUSIONS:** Oncologists had diverse preferences in response to breast cancer therapies. Heterogeneity is an important aspect of the study, and ignoring its presence would lead to incorrect inferences. This finding has implications on clinical

trials and research: hierarchical Bayesian models with random effects provide solutions to create individual-level utilities to account for heterogeneity.

#### PRM138

##### MAPPING FROM THE WOMAC TO THE EQ-5D-5L QUESTIONNAIRE: COMPARISON OF DIFFERENT METHODOLOGIES

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**OBJECTIVES:** Hip or knee osteoarthritis (OA) affects very negatively the health-related quality of life (HRQoL). Consequently, studies of treatment efficiency, typically conducted using health utilities are of great interest. One of the most widely used generic instruments to derive utilities is the EQ-5D-5L. However, in clinical practice, the use of specific HRQoL questionnaires is more frequent. Our objective was to develop mapping functions to estimate the utility index from the WOMAC questionnaire. **METHODS:** Prospective observational study, including 748 patients from Spain with hip or knee OA who completed the EQ-5D-5L and WOMAC, of whom 626 responded to the 6-months follow-up. Using the baseline data we derived the mapping functions from two WOMAC dimensions: pain (P) and function (F). GAM models and bootstrap were used to determine the optimal relationship grade and combinations of the WOMAC domains, and then, two strategies were used for the modelling: linear and beta regression. To select the best model the AIC was used. These functions were validated in the follow-up data using MAE and RMSE. **RESULTS:** The mean EQ-5D-5L index was 0.533 (SD=0.223, range=-0.416 to 1). The best combination of WOMAC domains were: P3+F and P-F+F. Both linear and beta models obtained similar AIC values for both combinations, although the validation of these functions in the follow-up sample showed slightly lower MAE and RMSE for the P-F+F. Further, the results of the beta model were not better than the linear model. Based on linear model the function was: EQ-5D-5L=0.9525-0.000056-P-F-0.0051-F (R<sup>2</sup>=0.618, AIC=-455.39, MAE=0.135, RMSE=0.178). **CONCLUSIONS:** As far as we know, this is the first mapping function from the WOMAC to the Spanish EQ-5D-5L in patients with hip or knee OA. It could be very useful for clinicians or researchers when cost-effectiveness studies are needed, and generic HRQoL instruments to derive utility indexes are not available.

#### PRM139

##### A MODIFIED TIME TRADE-OFF EXPERIMENT IN EQ-5D-3L VALUATION WITH FUZZY HEALTH STATES UTILITIES

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**OBJECTIVES:** People rarely actually trade health; hence, health preferences are not well formed. I assess the possibility of using fuzzy numbers when eliciting the utilities in time trade-off (TTO) and estimating the dimension importance and value sets. **METHODS:** A modified-TTO survey was used. Respondents (184, a convenience sample) answered demography questions, self-rated own health, and answered ten TTO tasks. Apart from a standard valuation, the respondent provided ranges of equally/somewhat plausible answers (EPAS/SPAS), which define the (dis)utility as a trapezoidal fuzzy number. The length of EPAS/SPAS was compared with the standard error of (a crisp) mean (SEM). The determinants of EPAS length were identified. I built several models to identify dimensions impact on (dis)utility: (A, as a benchmark) crisp disutility-crisp parameters; (B) fuzzy disutility-crisp parameters, based on the directed Hausdorff distance; two fuzzy-fuzzy models: using the Hausdorff distance (C1) or modelling the middles and lengths of EPAS (C2). Value sets were constructed. **RESULTS:** The average length of EPAS varied between 0.063 (state 21111) and 0.137 (11113), 2–6 times the length of SEM. EPAS widens with usual activities (UA) and anxiety/depression. Derived variables (e.g. maximal level, misery index) improve the fit considerably, and were used in C2. When modelling disutility, models A and B produce similar results (with u(55555)≈-0.8), proving the impact of imprecision is little with crisp parameters assumed. In C1, the largest imprecision is associated with levels 3 of UA ([0.343;0.443]) and pain/discomfort ([0.423;0.498]). Counterintuitively, some parameters (e.g. for mobility) degenerate to zero-length intervals. C2 seems most favourable approach as the worsening in any dimension implies imprecision; e.g., u(55555)=[-0.828;-0.716]. **CONCLUSIONS:** In eliciting utilities of health states, the imprecision (not decreasing with sample size) surpasses the stochastic uncertainty. Fuzzy methods allow inspection of mechanism behind imprecision and extrapolation onto value set. The inherent imprecision should be handled in decision making.

#### PRM140

##### MAPPING FROM THE BDI-II TO THE EQ-5D-5L QUESTIONNAIRE IN PATIENTS WITH MAJOR DEPRESSION DISORDER

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