one state to another. Depending on the purpose, the color of the parallellograms indicates the categories of a chosen cycle or could refer to additional attributes of the parallellogram structure. 

RESULTS: State probability and survival curves merely show specific aggregates of the data while classic Markov trace visualizations with for example bubble diagrams do not visualize data in a sense that would facilitate a detection of proportions and trends. Applying Parallel Sets to analyze Markov model data is a new approach to visualize parallellogram structure. The reference Markov cycle is as easy as highlighting particular dimensions, thus enabling the exploration of the progress of patient cohorts with certain characteristics through the model.

CONCLUSIONS: Model development always requires thorough analysis of its structure, behavior and results. Parallel Sets enable an intuitive and efficient visualization technique for presentation purposes as well as exploratory analysis.

PRM76 A TREATMENT SEQUENCE APPROACH FOR MODELLING CROHN’S DISEASE
Lee DF, Gladwell D3, Batty A1, Berry P1, Smith HT1

OBJECTIVES: Crohn’s disease (CD) is a relapsing remitting immunological inflammatory disease affecting the gastrointestinal tract. Previous economic evaluations in CD have focussed on single treatment comparisons within the treatment pathway. This project aimed to develop a model capturing lifetime costs and utilities throughout the entire treatment path. METHODS: A treatment sequence model was adapted from an earlier CD model by including the option to change treatments as patients stop responding. A Markov structure was used with five health-states: full-, partial- and no-response, surgery and death. Transition probabilities and survival rates were derived from previous analyses with separate transition matrices used for standard care and anti-TNF-α therapy. The model allows for ≤ 11 treatment stages (each with induction and maintenance phases) to be evaluated. Patients failing in induction progress to the next stage, if failing in maintenance they return to the induction treatment from that stage unless it is the same as the maintenance treatment. Surgery can be included as a separate treatment stage, although patients can receive surgery at any time. Costs were taken from published sources, and utilities from a combination of available contemporary data and reporting of modelling methods posed challenges for model development; in particular the lack of data on the efficacy of combination treat and treatments of sustained response on anti-TNF-α therapy.

RESULTS: In a patient cohort (mean age 35), lifetime costs and QALYs (£/Y) were £169,560 and 14.85 (20.97) for a treatment pathway where patients initiated therapy with steroids + azathioprine followed by azathioprine maintenance, progressed through more intensive steroid induction, available anti-TNF-αs and surgery, ultimately becoming treatment refractory. CONCLUSIONS: This model represents an advance in economic evaluation of CD, allowing lifetime evaluation of treatment strategies in a complex treatment area. Further research into the natural history of CD would improve the potential for robust economic evaluation.

PRM77 MAPPING THE MEANINGS OF WORDS PATIENTS USE TO DESCRIBE THEIR PAIN
Svanberg K1, Martin Postma1,2, Wolfe M1,2


OBJECTIVES: To identify the meanings of descriptors patients use to describe the quality of their pain by mapping clusters that patients identify as synonyms for the same pain sensation. METHODS: Subjects were recruited by web posting and telephone screening. Those self-reporting active treatment for Migraine or Low Back Pain (LBP) were scheduled for in-person interviews using card sort sort sorts with 93 different pain descriptors to identify those each subject commonly used to describe the pain associated with their condition, and to identify pairs of descriptors that describe the same pain. Network maps that diagrammed patient identified equivalences between descriptors were created for each condition using Netdraw (Borgatti 2002) and then compared. RESULTS: Subjects ranged between 19 and 70 years (mean age of 41). The majority (73%) was female, 65% were working full or part time, and 59% were Caucasian. Migraine patients identified more descriptive synonyms to describe their pain (10% of all identified synonym pairs) than the LBP group (6%). For the Migraine group, most words used synonymously formed a single large cluster of connections. For the LBP group two main clusters of descriptors emerged, differentiating low-intensity and identified synonym pairs) than the LBP group (6%). For the Migraine group, most patients identified more descriptive synonyms to describe their pain (10% of all synonyms identified). LIMITATIONS: Most of the patients self-referred to pain centers. Results need to be validated.

CONCLUSIONS: This method of pain mapping can be used to develop a taxonomy of pain descriptors for each condition.

PRM78 MAPPING OF THE NATIONAL EYE INSTITUTE 25-ITEM VISUAL FUNCTIONING QUESTIONNAIRE (VF-25) TO EQ-5D UTILITY SCORES
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OBJECTIVES: The purpose of this analysis was to develop a mapping algorithm to estimate EQ-SD utilities based on the 25-item National Eye Institute Visual Functioning Questionnaire (VF-25), a patient-reported outcome measure developed to evaluate vision-specific functioning.

METHODS: The dataset comprised 951 paired EQ-SD/VF-25 observations from 344 patients in RESTORE, a 12-month, randomized, double-masked trial in patients with visual impairment due to diabetic macular edema. EQ-SD index scores were calculated based on the UK tariff. We evaluated parallellogram visualizations and 4 separate models of VF-25. Primary utility was defined as a function of VF-25 score, based on 4 models: Tobit, CLAD (Censored Least Absolute Deviation), GEE (Generalized Estimating Equation) and reverse two-part GEEL models (which address the strong ceiling effect and left-skewed distribution of the VF-25). The model performance was assessed by ten-fold cross-validation comparing root mean squared error (RMSE), mean absolute error (MAE) and correlation with EQ-SD score (Spearman R-squared).

RESULTS: Mapping results were similar across all techniques and predictor lists. The reverse two-part GEEL model had the best predictive performance (MAE 0.140) but used fewest parameters, but correlated relatively weakly with the original EQ-5D results (Spearman R-squared 0.34).

CONCLUSIONS: Mapping VF-25 scores to EQ-5D utilities results in low predictive power independent of the modelling methodology applied. The difficulties in this mapping exercise are likely the result of the inability of the EQ-5D to discriminate vision-related activities.

PRM79 INTEGRATING PATIENT PREFERENCES AND CLINICAL TRIAL DATA IN A BAYESIAN MODEL FOR QUANTITATIVE RISK-BENEFIT ASSESSMENT
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OBJECTIVES: Regulatory agencies show a growing interest in quantitative models for risk-benefit assessments to increase decision transparency. Regulators increasingly rely on patient-centric perspectives in their benefit-risk assessment. OBJECTIVES: The purpose of this analysis was to develop a mapping algorithm to estimate EQ-SD utilities based on the 25-item National Eye Institute Visual Functioning Questionnaire (VF-25), a patient-reported outcome measure developed to evaluate vision-specific functioning.

METHODS: The dataset comprised 951 paired EQ-SD/VF-25 observations from 344 patients in RESTORE, a 12-month, randomized, double-masked trial in patients with visual impairment due to diabetic macular edema. EQ-SD index scores were calculated based on the UK tariff. We evaluated parallellogram visualizations and 4 separate models of VF-25. Primary utility was defined as a function of VF-25 score, based on 4 models: Tobit, CLAD (Censored Least Absolute Deviation), GEE (Generalized Estimating Equation) and reverse two-part GEEL models (which address the strong ceiling effect and left-skewed distribution of the VF-25). The model performance was assessed by ten-fold cross-validation comparing root mean squared error (RMSE), mean absolute error (MAE) and correlation with EQ-SD score (Spearman R-squared).

RESULTS: Mapping results were similar across all techniques and predictor lists. The reverse two-part GEEL model had the best predictive performance (MAE 0.140) but used fewest parameters, but correlated relatively weakly with the original EQ-5D results (Spearman R-squared 0.34).

CONCLUSIONS: Mapping VF-25 scores to EQ-5D utilities results in low predictive power independent of the modelling methodology applied. The difficulties in this mapping exercise are likely the result of the inability of the EQ-5D to discriminate vision-related activities.

PRM80 PROPORTIONAL HAZARDS ASSUMPTION AND ITS IMPACT ON RESULTS OF COST-EFFECTIVENESS ANALYSIS
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OBJECTIVES: If proportional hazards assumption holds, Cox regression allows for estimation of treatment effect in the form of hazard ratio. The common practice is to fit parametric model to control arm, then to apply hazard ratio to predict treatment arm. However proportional hazards assumption is rarely verified. Our aim was to estimate how proportional hazards assumption may impact cost-effectiveness. METHODS: Markov model was developed to describe cancer patients treatment. Health states distinguished in the model were: progression-free, progression and death. Time to progression and death were obtained from clinical trials for breast and renal cell carcinoma and implemented into the model on the basis of Weibull curves, fitted to data from clinical studies. Calculations were carried out separately with or without using given hazard parameters. It was assumed that compared interventions differ only in terms of time to progression or death. All the other parameters were the same for both arms. RESULTS: In case of renal cell carcinoma biphase model without proportional hazards assumption and its impact on obtained results should be estimated in sensitivity analysis.