population are 18.5% for males and 9.8% for females. **CONCLUSIONS:** Random sampling from patient level data provided the best approximation of actual NHANES population predicted CVD rates. The cholescy decomposition approach was slightly limited since only continuous variables could be utilized which could explain the deviation from the population predicted CVD rates. Independent sampling underestimates the mean by 10–20%, an interesting finding as many individual prediction models created patients with this approach. Researchers should be cautious in their use of summary statistics when populating individual simulation models.

**PRM74**

**VALIDATION OF THE SPHR DIABETES PREVENTION MODEL**

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**OBJECTIVES:** We have developed a model to evaluate type-2 diabetes prevention interventions. We aimed to validate this model against external data to test the accuracy of our outputs. **Methods:** An individual patient simulation was developed to predict longitudinal trajectories of HbA1c, 2-hr glucose, FPG, BMI, systolic blood pressure, total cholesterol and HDL cholesterol based on statistical analyses of the Whitehall II longitudinal cohort. Criteria for diabetes diagnosis were flexibly specified. Data from this model were compared against published data to evaluate the performance of our model in predicting the results of the ADDITION trial for diabetes screening. **RESULTS:** We found that the model overestimated three-year incidence of diabetes by 8.5%, and was more accurate in high-risk individuals, but underestimated diabetes incidence in medium risk individuals (HbA1c 5.5–5.9) compared with the EPIC-Norfolk data. Predictions from HSE 2003 were highly accurate. **CONCLUSIONS:** The addition of an individual level model allows for a more accurate prediction of diabetes complications and can be used to extract meaningful data from the UKDFDS outcomes model. Several validations were performed to compare model outcomes with published data from external sources. We assessed the predicted diabetes incidence using data from the EPIC Norfolk cohort. Data from the Health Survey for England (HSE) 2003 cohort was simulated for 8 years to compare predicted disease incidence and metabolic distributions with HSE 2011 data. We compared microvascular, cardiovascular and mortality outcomes in a diabetic population with those observed in the UKDFDS. We assessed the performance of the model in predicting the results of the ADDITION trial for diabetes screening. **RESULTS:** We found that the model overestimated three-year incidence of diabetes by 8.5%, and was more accurate in high-risk individuals, but underestimated diabetes incidence in medium risk individuals (HbA1c 5.5–5.9) compared with the EPIC-Norfolk data. Predictions from HSE 2003 were highly accurate. **CONCLUSIONS:** The SPHR Diabetic model appears to be fairly accurate at predicting outcomes in patients with diabetes and can be used for microvascular, cardiovascular and mortality with the exception of one set of input parameters. The standard half-cycle correction method provided more accurate results than calculations with- out any half-cycle correction with the exception of one set of input parameters. **CONCLUSIONS:** Based on our model the most accurate method for half-cycle correction is Simpson’s method as in most cases it was the closest to real data. It is important to note that with a few exceptions even the standard method’s results were more accurate than in cases where no half-cycle correction was applied.

**PRM77**

**ANALYSIS OF A MODEL OF DECISION BASED ON FUZZY LOGIC TO PHARMACOECONOMICS: TREATMENT OF CHRON’S DISEASE WITH ANTTNF IN OUT OF LABEL USE**

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**OBJECTIVE:** We present a model based on fuzzy logic, and apply to off label antitNF (in Crohn’s disease (CD) Infliximab (IB) 30 mg/kg/week) treatment, adalimumab (ADA) 80mg/2 weeks, Certolizumab (CZB) 200mg/2weeks). The term “fuzzy logic” (FL) was introduced in 1965 by LAZadeh. Compared to traditional logic, FL variables may have a truth value in degree. FL has been applied to many fields, from medicine to economics. In medical research, FL is used to accommodate uncertainties and compensations of diabetes were estimated from the UKDFDS outcomes model. Several validations were performed to compare model outcomes with published data from external sources. We assessed the predicted diabetes incidence using data from the EPIC Norfolk cohort. Data from the Health Survey for England (HSE) 2003 cohort was simulated for 8 years to compare predicted disease incidence and metabolic distributions with HSE 2011 data. We compared microvascular, cardiovascular and mortality outcomes in a diabetic population with those observed in the UKDFDS. We assessed the performance of the model in predicting the results of the ADDITION trial for diabetes screening. **RESULTS:** We found that the model overestimated three-year incidence of diabetes by 8.5%, and was more accurate in high-risk individuals, but underestimated diabetes incidence in medium risk individuals (HbA1c 5.5–5.9) compared with the EPIC-Norfolk data. Predictions from HSE 2003 were highly accurate. **CONCLUSIONS:** The SPHR Diabetic model appears to be fairly accurate at predicting outcomes in patients with diabetes and can be used for microvascular, cardiovascular and mortality with the exception of one set of input parameters. The standard half-cycle correction method provided more accurate results than calculations with- out any half-cycle correction with the exception of one set of input parameters. **CONCLUSIONS:** Based on our model the most accurate method for half-cycle correction is Simpson’s method as in most cases it was the closest to real data. It is important to note that with a few exceptions even the standard method’s results were more accurate than in cases where no half-cycle correction was applied.
addition, the Dutch National Health Care Institute commented on usefulness for decision makers. The independent Assessment Report and other reports in relation to the NICE website containing information on the methods used and/or rationale for the approach taken to model the relationship between OS and PFS/TPF within the health economic model. This included the sponsor submission and updated analyses, the HFAs, the independent Assessment Report, and other reports in relation to the appraisal process. RESULTS: In those instances where OS data were immature or not available, PFS/TPF was typically assumed to be a valid surrogate of OS. Justification for this assumption was inconsistently reported. In some health economic models a quantification of the assumed relationship was informed by published evidence and/or expert judgement. In some cases attempts were made to explore the potential impact of this relationship in sensitivity analysis. CONCLUSIONS: The methods and/or rationale given for the approach used to model the relationship between OS and PFS/TPF within the health economic model has been inconsistently reported and justified. Whist some health economic models attempted to quantify this relationship, further transparency is required. A consensus needs to emerge on the most appropriate approaches to be used within health economic models to quantify this relationship, specifically when OS data are not available or immature and to identify the circumstances when particular approaches may be most relevant.

PM8M
COMPARISON OF METHODS TO ESTIMATE HEALTH STATE UTILITIES IN METASTATIC BREAST CANCER PATIENTS
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OBJECTIVES: Patient-level utility values for different stages of MBC and toxicities commonly associated with chemotherapy regimens are useful for health economic assessments. Three methods to estimate utilities exist when direct utility data are not available: (a) unadjusted utility ‘mapping’ from existing disease-specific scales, (b) vignette studies that describe the health states, or derivation of preference-based measures from an existing condition-specific scale. This study compares utility estimates in MBC utilizing the above methods. METHODS: Based on data from a phase 3 clinical trial in MBC (N=1102) utility mapping was conducted using a published regression algorithm to convert the EORTC QLQ-C30 questionnaire to the EQ-5D utility. Mean utility values were estimated for relevant health states: stable disease (SD), tumor regressions (TR), and disease progression (DP). Consequences of different methods to estimate utilities in MBC may lead to a wide range of estimated values with potentially significant implications for health economic evaluation. Caution must be exercised when comparing utility values derived using different methods. It is preferable to use actual clinical data from patients directly and use vignettes as a last resort.

PM8A
COST-EFFECTIVENESS MODELS FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): CROSS-MODEL COMPARISON OF HYPOTHETICAL TREATMENT SCENARIOS
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OBJECTIVES: To compare different COPD cost-effectiveness models with respect to structure and input parameters and to cross validate the models by running the same hypothetical treatment scenarios. METHODS: COPD modeling groups simulated four hypothetical interventions with their model and compared the results with a reference scenario of no intervention. The four interventions modeled assumed: 1) 20% reduction in decline in lung function, 2) 25% reduction in exacerbation frequency, 3) 10% reduction in mean number of hospitalizations, and 4) 20% reduction in dyspnoea and cough symptoms. The differences in lung function decline and exacerbation frequency were simulated for five-year and lifetime horizon with standardization, if possible, for sex, age, COPD severity, smoking status, cardiovascular diseases, and its complications. The differences in life years and quality-adjusted life years were calculated. RESULTS: The differences in utility values were on average £0.82/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY. The differences were on average between £0.46 to £0.95/QALY.