to promote awareness on the medications, balanced diet and physical activity to improve the quality of life of an individual.

PRM202 SIMULATING INDIVIDUAL PATIENT LEVEL DATA TO ADDRESS TREATMENT SYSTEMATIC REVIEW METHODS WHEN ORAL SUMMARY DATA ARE AVAILABLE
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OBJECTIVES: Treatment switching commonly occurs in the pivotal HTA evidence for advanced or metastatic cancer treatments submitted to reimbursement agencies. Simple approaches, such as Intention-to-treat (ITT) analysis, have typically been used to analyse data with treatment switching, despite simulation studies showing these techniques are likely to underestimate the underlying treatment effect. With more manufacturers conducting indirect comparisons (ICs) to compare treatments, summary data are being used more in analysis. The method outlined addresses treatment switching by using only summary data and is available to ensure appropriate estimates for the treatment effect are achieved when the data is then used in an IC.

METHODS: Using digitised survival curves, multiple datasets that are representative of the original individual patient data (IPD) are simulated. Treatment switching is performed, and then established methods which adjust appropriately for treatment switching used to analyse the simulated data. This approach is applied to an example from a technology appraisal (TA) submitted to National Institute for Health and Care Excellence (NICE), and the ITT hazard ratio and median survival obtained and compared with those reported, before analysis using a Rank Preserving Structural Failure Time Model (RPSFTM).

RESULTS: Averaging over 2000 datasets, the replicated summary statistics were similar to those reported. Both median survival times were within 1 month of those stated in the TA and the hazard ratio less than 0.05 different. Subsequent analysis using an RPSFTM shows the new treatment to be more effective and inappropriately adjusting for crossover to have underestimated the treatment effect.

CONCLUSIONS: Adjusting summary data is important as otherwise, subsequent analysis conducted will give inappropriate results. The simulated data used within this example demonstrates that using average similar results to those reported. Hence, the further analysis to address treatment switching issues gives more appropriate treatment effect estimates.

PRM203 MODELING THE EFFECT OF COMBINING ALOGLIPTIN WITH DUAL THERAPY IN TYPE 2 DIABETES
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OBJECTIVES: To estimate the impact of combining the dipeptidyl peptidase-4 (DPP-4) inhibitor, alogliptin, with metformin and sulfonylureas (alogliptin dual therapy) to achieve the same results in patients with type 2 diabetes as those achieved in studies of the constituent parts, and to test the methodology to estimate the effect size for triple therapy using the sum of the constituent parts. Alogliptin tripeptide, and for their constituent parts, informed the model. A weighting factor, β, coefficient, derived from DPP-4 mono, dual, and triple therapy trials, was used to estimate the effect size for triple therapy using the sum of the constituent parts. The estimated mean β value was validated against the observed effect size of alogliptin plus pioglitazone plus metformin, using the pooled effect from the MTC.

RESULTS: An estimated mean of 0.83 represented the DPP-4 inhibitor class. Validation of the approach resulted in a similar β coefficient for pioglitazone triple therapy (0.82). Absolute change in HbA1c, from baseline for alogliptin triple therapy was estimated as -0.77% (95% CI -1.16, -0.39). Similar values were observed in the MTC for alogliptin -0.94% (95% CI -3.95, 0.40), lanaglipitin -0.62 (95% CI -0.87, 2.08), and vildagliptin -0.80% (95% CI -7.00, 5.43).

CONCLUSIONS: The wide confidence interval is consistent with expectations in the literature and is a limitation of the method employed, in that it requires the variance of the individual studies to be summarized. Nevertheless, the method demonstrates the value of modeling when clinical trial evidence is not available.

PRM204 UNCERTAINTY AND PROBABILISTIC METHODS IN MULTI-CRITERIA DECISION ANALYSIS
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OBJECTIVES: Multi-Criteria Decision Analysis (MCDA) is a collection of techniques for choosing optimal decisions when two or more criteria need to be taken into account in the decision process. Most MCDA techniques require the specification of a number of parameters; criteria weights, utility functions or indifference thresholds. We wish to account for the uncertainty in these parameters which may arise due to the Decision Maker’s (DM) experience and the context from which the preferences are derived. One method that allows for the combination of available knowledge on the parameters. Such knowledge can come from empirical data, expert elicitation, survey data, decision-making committees, or some combination of these. RESULTS: Depending on the method used, the expert elicits uncertain values in such a way the model will have the potential to identify entities with different benefit scores for each action, or a rankogram which depicts the uncertainty in the ranking of actions. CONCLUSIONS: Knowledge about this uncertainty allows decision makers to make accurate informed decisions. A decision action may be clear when uncertainty is sufficiently low, or it may be necessary to request more information or to refine the decision formulation if uncertainty is high, potentially leading to improved decision-making.

PRM205 SYSTEMATIC REVIEW AND CRITICAL APPRAISAL OF THE STATISTICAL METHODS USED IN PUBLISHED NETWORK META-ANALYSIS OF ANTICOAGULANTS (NOACs) WITH WARFARIN FOR THE PREVENTION OF STROKE IN PATIENTS WITH ATRIAL FIBRILLATION (AF)
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INTRODUCTION: The three main novel anticoagulants (NOACs) currently licensed in Europe, apixaban, dabigatran and rivaroxaban, have all been directly compared against warfarin in randomized controlled trials. However, none of the three drugs have been directly compared against each other. Thus, there has been an increase in the number of meta-analyses and indirect comparisons published comparing the NOACs against each other or via warfarin as a common comparator.

OBJECTIVES: Systematically review all meta-analyses and indirect comparisons evaluating the NOACs against warfarin for the prevention of stroke in patients with AF and critically appraise the statistical methods used to do so.

METHODS: Systematic searches of EMBASE, Medline, EBM Reviews, EcomLit as well as manual searches of ClinicalTrials.gov, the Cochrane Library, CADTH, NICE, NHSED and HTA were conducted. Data was abstracted from any citation applying statistical methods to compare the efficacy and safety of NOACs for the prevention of AF-related stroke. Information regarding the statistical approach, model assumptions, data presentation, interpretation of the evidence, and discussions of internal and external validity was used to quality rate each study. The method performed used to conducted indirect comparisons was most widely used. There were generally three main model assumptions required: the similarity, homogeneity and consistency assumptions, each being investigated with varying scrutiny in the studies reviewed. According to the quality assessment, the indirect comparison conducted by Wells and colleagues (2012) is of the highest relative quality.

CONCLUSIONS: The limited number of RCTs available comparing the NOACs to standard therapy, creates continued uncertainty concerning the comparative efficacy and safety of these anticoagulants. In order to establish which individual NOAC is most likely to benefit a given patient population, indirect comparisons and meta-analyses are increasingly used. However, the quality of indirect comparison studies are variable and results should be interpreted with care.

PRM206 METHODOLOGICAL ASSESSMENT OF MATCHING-ADJUSTED INDIRECT COMPARISONS: CASE STUDY APPLICATION TO ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)
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OBJECTIVES: Matching-adjusted indirect comparison (MAIC) is a novel comparative effectiveness approach to address biases that can appear in traditional indirect comparison (IC) methods when patient characteristics differ across trials. We examined three unanswerd MAIC methodological questions and applied the proposed solutions to an example. METHODS: Using individual patient data from two randomized controlled trials (RCTs) comparing guanfacine (GXR) vs placebo and published summary statistics from four RCTs comparing atomoxetine (ATX) vs placebo, MAIC was used to reweight the GXR data so that observing adjusting for patient baseline characteristics and placebo arm outcomes. RESULTS: Both treatments decreased ADHD-RS-IV scores relative to placebo (-17.9 GXR vs -10.7 placebo, -16.4 ATX vs -5.8 placebo). In base line matching, MAIC results were insensitive to variable selection via regression and the statistical inference, but sensitive to adding variables to the matching algorithm. CONCLUSIONS: The limited number of RCTs available comparing the NOACs to standard therapy, creates continued uncertainty concerning the comparative efficacy and safety of these anticoagulants. In order to establish which individual NOAC is most likely to benefit a given patient population, indirect comparisons and meta-analyses are increasingly used. However, the quality of indirect comparison studies are variable and results should be interpreted with care.