to characterize the underlying disease progression parameters and strengthen these assessments.

**PRM90**

**OVERVIEW OF HEALTH ECONOMIC MODELS IN TYPE 2 DIABETES MELLITUS (T2DM): A SYSTEMATIC REVIEW OF PUBLICATION DATA**

**Objective:** To identify and compare economic models developed to evaluate the cost-effectiveness of treatments for type 2 diabetes mellitus (T2DM), and their use in health care decision-making. **Methods:** This research updates two previously published systematic reviews. The current systematic literature review was performed according to a pre-defined search strategy and review criteria in six commonly used databases from September 2008 to January 2013. In addition, websites of Health Technology Assessment (HTA) organizations across major diabetes conferences proceedings were also reviewed. For each identified model, key information was extracted and assessed. **Results:** Overall, 2262 citations were identified, 122 full text publications, 369 conference proceedings and 106 HTA literature search using a predefined strategy in MEDLINE, EMBASE and the Cochrane Library identified 16 unique placebo-controlled RCTs reporting FEV1 trough: TIO18 (n = 13) and AB400 (n = 3). The development of trough FEV1, over time for AB400, TIO18 and placebo (FLA) was modeled with fractional polynomials, and the difference between the parameters of these polynomials within a trial were synthesized across studies with a Bayesian NMA. This type of NMA allows for the uncertainty surrounding the decision about which option is optimal for different models, either using Markov-modelling or micro-simulation techniques, and were based on similar key data sources. A key challenge of T2DM economic modelling is to appropriately predict the long-term progression of relevant risk factors and translate these into clinical and economical consequences of diabetes-related complications. **Conclusions:** To date, the UKFOS risk equations were most commonly used for the above purposes in the newly identified models. Among published studies and HTA submissions, T2DM economic models that are widely published and accepted by HTA include CARDIFF and CORE. A total of 10,000 microsimulations were used to estimate incremental effectiveness as CV events avoided and quality-adjusted life-years (QALYs). **Results:** In the 10,000-patient statin user cohort simulated by the case-wise-no-miss mechanism estimated that statins resulted in 366 events avoided and 0.18 QALYs gained. The framework presented here is useful for comparing drugs in which optimal effectiveness and costs may be similar, but differential adherence may affect outcomes.

**PRM94**

**EVP1 CURVES IN PRACTICE**

**Objective:** To estimate the relative efficacy of acldinum bromide 400 µg BID (AB400) to tiotropium 18 µg QD (TIO18) by means of lung function data in patients with COPD, within the first 24 weeks of treatment and illustrate the repeated measures network meta-analysis (NMA) models. **Methods:** A systematic literature search using a predefined strategy in MEDLINE, EMBASE and the Cochrane Library identified 16 unique placebo-controlled RCTs reporting FEV1 trough: TIO18 (n = 13) and AB400 (n = 3). The development of trough FEV1, over time for AB400, TIO18 and placebo (FLA) was modeled with fractional polynomials, and the difference between the parameters of these polynomials within a trial were synthesized across studies with a Bayesian NMA. This type of NMA allows for the simultaneous analysis of outcomes at multiple time points. The within-trial contribution was modeled from publications included studies, and as such a sensitivity analyses was performed assuming different values for the correlation. **Results:** Given the fractional polynomial parameters obtained with the NMA models, the corresponding treatment effect functions for AB400 vs FLA or TTO vs FLA were estimated. The model with e-0.9log(t) had the best fit according to the deviance information criterion (DIC). These polynomials and within study correlation were used for the modeling of the outcomes over time. AB400 is equal in efficacy compared to TIO18 during the first 24 weeks, as the 95% CI of the difference in CFV between the treatments includes zero while the mean is ≤ 15mL. Furthermore, the probability that each treatment was best was calculated as a function of time. **Conclusions:** This analysis demonstrates the use of the proposed NMA models and suggests that maintenance treatment with AB400 results in comparable improvements in lung function, as TIO18 in COPD patients over a 24 weeks period.

**PRM95**

**PRIORITY EVIDENCE SOURCES FOR POPULATING DECISION ANALYTIC MODELS WITHIN HEALTH TECHNOLOGY ASSESSMENT (HTA): A SYSTEMATIC REVIEW OF HTA MANUALS AND HEALTH ECONOMIC GUIDELINES**

**Objective:** To identify methods used in the typical ‘textbook’ example for evaluating the cost-effectiveness of interventions, in order to determine the number of scenarios where the EVPI curve takes a different form compared to the one illustrated in the typical ‘textbook’ example. For example, when the majority of the plotted outcomes are spread over the northern quadrants the traditional EVPI peak is absent, and this could be explained by the fact that the reduction in decision uncertainty does not outweigh the increased value of opportunity loss. Further, plots from each of the eastern quadrant illustrated in which the indifference curve is horizontal with no area in which zero is gradually decreases. This study may inform the interpretation of EVPI curves, and add value to the analysis of the value of additional research.

**PRM96**

**MODELING MEDICATION ADHERENCE IN COMPARATIVE EFFECTIVENESS**

**Research:** Steinke HI1, Campbell DJ2

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**Objective:** Real-world patients do not exhibit the level of medication adherence seen in clinical trials. Hence, the effectiveness of medications in routine practice may differ. It is important to understand the manifestations of suboptimal medication adherence in a population to assess the potential of adherence-improving strategies. Langenveld J, and the real-world value of medications. The objective of our study was to compare the clinical outcomes of an adherence naïve framework versus a dynamic adherence framework using the case of statins for primary prevention of cardiovascular disease versus no statin use. **Methods:** Statin adherence was categorized as PDC0 < 20, PDC1–< 80 and PDC2 ≥ 80 based on a longitudinal epidemiological cohort study of US medical and pharmacy claims. Yearly adherence transitions were incorporated into a Markov microsimulation using Teenage software. Tracker variables were used to store adherence transitions which were then used to adjust probabilities of cardiovascular events (MI, stroke, acute angina) over the patient’s lifetime. Statin effectiveness was adjusted between 0% and 100% based on the PDC model. A total of 10,000 microsimulations were used to estimate incremental effectiveness as CV events avoided and quality-adjusted life-years (QALYs). **Results:** In the 10,000-patient statin user cohort simulated by the case-wise-no-miss mechanism estimated that statins resulted in 366 events avoided and 0.18 QALYs gained. The framework presented here is useful for comparing drugs in which optimal effectiveness and costs may be similar, but differential adherence may affect outcomes.