Zidovudine + Lamivudine combination therapy vs Zidovudine monotherapy, to treat HIV-1 infection on probabilistic simulations, cumulative incremental net monetary benefits (CINMB) at a CE threshold of £20,000/QALY and probabilities of being cost-effective at various time-horizons (1-20 years) were estimated. Further, for each time-horizon, a CINMB frequency distribution was plotted and summarized statistically. RESULTS: The combination therapy with zidovudine and lamivudine increased the outcome uncertainty increased over time, the decision uncertainty decreased. 95% confidence interval for expected CINMB was narrower at year 1 (1,771E to 1,775E) than in year 2 (7,210E to 2,299E), simultaneously the probability of being cost effective increased from 5% to 80% during this time. Outcome uncertainty, measured as the standard deviation of CINMB values stabilized after 5 years while probability of the combination therapy being cost effective continued to increase, indicating that decision uncertainty does not vary in tandem with outcome uncertainty. CONCLUSIONS: The above analysis shows that higher outcome uncertainty does not necessarily lead to higher decision uncertainty. CINMB could be a useful tool to observe the relationships between outcome uncertainty, decision uncertainty and time.

PRM107 DEVELOPMENT OF A MODEL TO ASSESS THE COST-EFFECTIVENESS OF THERAPIES FOR PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) FOLLOWING A REFERENCE MODEL FRAMEWORK Aguir-Rejales B1, Palencia R2, Kandawanyi F1, Flavin J1, Guthier A1, Davies MJ1
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OBJECTIVES: To describe the practical approach implemented to construct a global cost-effectiveness model for T2DM therapies following a framework proposed for the development of reference models to inform public funding decisions. METHODS: A systematic review of published models was conducted to conceptualise the model in terms of natural history and relevant effects to include. 1) Clinical and health economic experts were selected to provide feedback during the model conceptualisation stage (by Harel paternity), 2) The model implementation and the assessment of the results. 3) The model was built and populated based on the systematic identification of best available data, a network meta-analyses, a review of previous T2DM submissions to health authorities and cost-effectiveness evidence. The model incorporated several structures for uncertain areas, such as: treatment patterns; type and timing of adverse events; their impact in the occurrence of long-term complications; and the impact of weight changes on relevant endpoints. 4) The model was then validated based on expert’s accuracy, feedback from country affiliates and consistency with the CORE model results. 5) The critical feedback received by HTA bodies has also been used to refine the model and improve its credibility accordingly. RESULTS: Experts’ input proved invaluable at each developmental stage. One challenge relates to the comparability with other published T2DM models, which were not fully transparent regarding assumptions. This framework resulted in a flexible model, accurate and stable, and easily adaptable to different health care systems. Country adaptations have contributed to the identification of aspects that require relevant structural changes and their rationale. CONCLUSIONS: The followed framework enhanced the transparency of the model and the accuracy of the results. Using a reference model to develop therapeutic guidelines, with adaptations made in collaboration, this model, should help ensure consistent and comparable evaluations of the model across different countries.

PRM108 ASSESSING THE RELATIONSHIP BETWEEN INDIVIDUAL ATTRIBUTES IDENTIFIED IN MCDA: A THREE-MULTI-CRITERIA (MCDM) OF RARE DISEASES AND ANNUAL TREATMENT COSTS IN RARE ENDODERMIC DISORDERS Schie R1, Irwin J1, Teneishvili M1, Krabbe FEM1, Connolly M1
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OBJECTIVES: Patients have a perception that orphan products are extremely expensive. The current health technology assessment (HTA) systems might be too restrictive for orphan drugs, therefore potentially denying patients access to life-saving medicines. While price is important, it should be considered in relation to other factors found in literature.

PRM109 VISUALIZING METHODS FOR DISCRETE-EVENT-SIMULATIONS USING THE EXAMPLE OF A BREAST CANCER DECISION-ANALYTIC MODEL Jahn B1, Rochau U1, Steterovikas J1, Kurzthaler C2, Klubiszewski M1, Urcz C1, Einzinger P1, Piringer H, Popper M3, Siebert U2
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OBJECTIVES: Discrete-Event-Simulation (DES) is a commonly used modeling tool to analyze the comparative effectiveness of alternative health technologies and to allocate health care resources. The often rather complex and visualization is very important to improve transparency and acceptability. This study aims to illustrate and contrast alternative visualization techniques on a decision-analytic model for breast cancer. METHODS: DES visualization techniques for the conceptual model were selected, applied on a real world modeling example and compared. RESULTS: In health care, the recently published IFOSF-SMDM Modeling Good Research Practice guidelines recommend flow charts or state charts to represent the key elements of a model, including the possible pathways, and the sequence of decisions and points. For flow charts, we found an international standard (ISO 5807). The application of standards like this might support harmonization of process-oriented models. In general, flow charts may lack the information of health states and transitions between health states that are relevant for clinicians to review the model. The semantic for state transitions is lacking. In DES visualization, the nodes and edges are used to define the domain of the bubble diagrams of the State-Transition (Markov) Models (e.g. one state containing other states, one state detects changes in another). In state charts, health states could explicitly be named but treatment processes and resources use are less explicit. For DES software implementation to be less time consuming and transparent, the application of visualization standards and guidelines was not always straightforward for our breast cancer model. CONCLUSIONS: In the case example there was no superior visualization technique.

PRM110 MICROSIMULATION MODEL FOR THE ASSESSMENT OF PERSONALIZED CANCER CARE: THE MAPCCA MODEL FRAMEWORK Van der Meijde E1, van den Eertwegh AJ2, Fijneman R1, Menjez GA1, Linn SC1, Dupre JM1, Vani B1, Taipei HC1
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OBJECTIVES: Most cancer care models are based on observed clinical events such as recurrence-free and overall survival. Times at which events are recorded depend not only on effectiveness of treatment, but also on timing of examinations and types of interventions. Should these change, observations of time-to-event data also change as well. Construct a microsimulation model that describes the cancer disease process using a description of underlying tumor growth as well as its interaction with diagnostics, treatments and surveillance. The aim is to arrive at a framework that allows for exploration of the impact of simultaneously altering two or more aspects of the care process. METHODS: The framework consists of two main modules: 1) The disease module, which models the disease progression of transitioning between tumor growth states at the tumor level, and the rate of metastatic progression. 2) The clinical management module, which consists of diagnostic criteria, disease, and a patient level, describing clinical observed states, such as recurrence and death, either from the disease or other causes. The clinical management module consists of the care patients receive, i.e. the diagnostic process, treatment and surveillance. This module interacts with the disease process, influencing the rate of transitioning between tumor growth states at the tumor level, and the rate of detecting a recurrence at the patient level. RESULTS: The disease process was performed to examine the feasibility of applying the framework to melanoma progression. Results demonstrated stage specific recurrence rates similar to those found in literature. CONCLUSIONS: The proposed microsimulation model framework allows for generating individual patient histories by simulating underlying tumor growth in interaction with clinical management. Our modeling approach allows for the exploration of the potential of drugs intervening in different parts of the disease process. The disease model was therefore extended and the model implementation and the assessment of the results helped ensure consistent and comparable evaluations of the model across different countries.