

## Good Practices for Model Structure Development and Managing Structural Uncertainty in Decision Making

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**Abstract :** Increasingly, decision analytic models are used to inform decisions about whether or not to publicly fund new health technologies. It is well noted that the accuracy of model predictions is strongly influenced by the appropriateness of model structuring. However, there is relatively inadequate methodological guidance surrounding this issue in guidelines developed by national funding bodies such as the Australian Pharmaceutical Benefits Advisory Committee (PBAC) and The National Institute for Health and Care Excellence (NICE) in the UK. This presentation aims to discuss issues around model structuring within decision making with a focus on (1) the need for a transparent and evidence-based model structuring process to inform the most appropriate set of structural aspects as the base case analysis; (2) the need to characterise structural uncertainty (If there exist alternative plausible structural assumptions (or judgements), there is a need to appropriately characterise the related structural uncertainty). The presentation will provide an opportunity to share ideas and experiences on how the guidelines developed by national funding bodies address the above issues and identify areas for further improvements. First, a review and analysis of the literature and guidelines developed by PBAC and NICE will be provided. Then, it will be discussed how the issues around model structuring (including structural uncertainty) are not handled and justified in a systematic way within the decision-making process, its potential impact on the quality of public funding decisions, and how it should be presented in submissions to national funding bodies. This presentation represents a contribution to the good modelling practice within the decision-making process. Although the presentation focuses on the PBAC and NICE guidelines, the discussion can be applied more widely to many other national funding bodies that use economic evaluation to inform funding decisions but do not transparently address model structuring issues e.g. the Medical Services Advisory Committee (MSAC) in Australia or the Canadian Agency for Drugs and Technologies in Health.

**Keywords :** decision-making process, economic evaluation, good modelling practice, structural uncertainty

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