CADTH Viewpoint: Model Validation Tool

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Economic models are used to assess health care technologies (for example, drugs, medical devices, and diagnostics) to understand potential clinical effects and costs (i.e., those associated with the technologies and management of the condition) over time. This information is useful to decision-makers when determining how, and if, to use technologies.

Validating economic models is important to ensure that the modelling results address decision-making needs, measure intended outcomes, and are accurate. While technical papers on model validation, as well as reporting guidelines, are available, there were no accessible tools to ensure that models are conceptually fit-for-purpose and technically correct.

Based on a review of the published and grey literature on model validation, and in consultation with health economists, a series of items to consider for model appraisal and validation were collected.[1] These items were discussed and refined to a 53-item comprehensive and accessible list, which includes items pertaining to the conceptualization of the model to address the decision problem, computer model specification and verification, and general areas for awareness. The tool was tested internally and reviewed by a number of health economists — including our colleagues from the Institut national d'excellence en santé et en services sociaux (INESSS) in Quebec — to ensure clarity and usability.[2]

Building economic models can be a complex process, and this tool does not cover all the possible aspects that could arise in model development. It is not intended to address concerns related to the quality of model inputs, but rather to ensure that the process of model validation is consistent and reproducible. This tool can be used by health economists and other researchers who conduct economic evaluations, as well as those who are using economic models for decision-making, to ensure models are fit-for-purpose and function properly.

References

1. Coyle D, Haines A, Lee K. The development of a model validation tool to assist in the conduct of economic evaluations. *Can J Health Technol*. 2024;4(3). https://canjhealthtechnol.ca/index.php/cjht/article/view/MG0026. Accessed 2024 Apr 12.
2. Coyle D, Haines A, Lee K. Model validation tool to assist in the conduct of economic evaluations. *Can J Health Technol*. 2024;4(3). https://canjhealthtechnol.ca/index.php/cjht/article/view/MG0026/MG0026. Accessed 2024 Apr 12.