

The following are the seven steps in decision analysis. These should be followed in your evidence interpretation and integration activities.

Step 1

Topic selection: <http://www.nice.org.uk/getinvolved/topicselection/TechnologyAppraisalTopicSelection.jsp>

To do this:

- a. Identify your stakeholders and identify their topics of importance, e.g., patients, professionals and the health of the public
- b. Prioritize stakeholder questions and describe how a systematic review may help to answer these questions and meet stakeholder needs.
- c. Provide stakeholders with background information and materials, then elicit their questions.

Step 2

Scope of Work: Frame your research question.

<http://publications.nice.org.uk/guide-to-the-methods-of-technology-appraisal-2013-pmg9/introduction>

To do this:

- a. Conduct targeted discussions with specific stakeholders or topic experts to clarify the context of the decisional issue driving the topic nomination. “policy-maker survey on vaccine delivery, cost studies for future HIV vaccination programmes, and associated simulation modeling exercises analysing the relative cost-effectiveness of potential HIV vaccination strategies”
(Barth-Jones DC, Cheng H, Kang LY et al. Cost effectiveness and delivery study for future HIV vaccines. AIDS. 2005;19(13):w1-w6. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/?term=16103763>)
- b. Describe the PICO (Patient population, Intervention, Comparators, and Outcome) timing, and setting that will be covered in the scope of work, including subgroups, current treatments and any alternatives.
- c. Work with stakeholders and experts to identify the decisional dilemma and to provide insight into the clinical and decisional context.

Step 3

Identify important stakeholder outcomes, such as:

- a. Morbidity
- b. Benefit
- c. Length of Life
- d. Quality of Life
- e. Costs
- f. Time horizon (short- or long-term)
- g. Discount rate

Step 4

Systematic evidence identification.

- a. Ensure that patient, caregiver, or consumer groups are represented among your stakeholders to assist with ranking of important patient-centered health outcomes
- b. You may want to hold Technical Expert Panels to supplement and help focus the literature search, evaluate the quality of studies, and rate the strength of the overall body of evidence.

Step 5

Integration of evidence

Development of decision analytic models (decision trees, state transition models, Monte Carlo simulation models, discrete event simulation models)

Step 6

Validate the model.

“Validation involves face validity (wherein experts evaluate model structure, data sources, assumptions, and results” (Eddy DM, Hollingworth W, Caro JJ, et al. Model transparency and validation: a report of the ISPOR-SMDM Modeling Good Research Practices Task Force—7. Value Health. 2012;15(6):843-50. Available at:

<http://www.ncbi.nlm.nih.gov/pubmed/22999134>)

Have your clinical experts can evaluate the model structure, data sources, assumptions, and results for face validity.

Step 7

Maintain transparency and relevance for your stakeholders.

“An advisory board, representative of potential users of economic evaluations, was set up to identify preferences for how findings from economic evaluations might be presented to decision makers and to test the impact of different approaches, different outputs and different presentational styles.” (Phillips CJ, Fordham R, Marsh K et al. Exploring the role of economics in prioritization in public health: what do stakeholders think? European Journal of Public Health. 2011;21(5):578-584. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/?term=20817687>)

“...the intention is to provide sufficient information to enable the full spectrum of readers to understand a model’s accuracy, limitations, and potential applications at a level appropriate to their expertise and needs.” (Eddy, 2012)

- a. Provide a peer review of the draft evidence report.
- b. Show your stakeholders how the model is built.
- c. Conduct systematic identification of suitable data sources.
- d. Share model and sensitivity analysis results. Are the results clinically meaningful?