

Structured expert elicitation in HTA: the dos, don'ts and maybes

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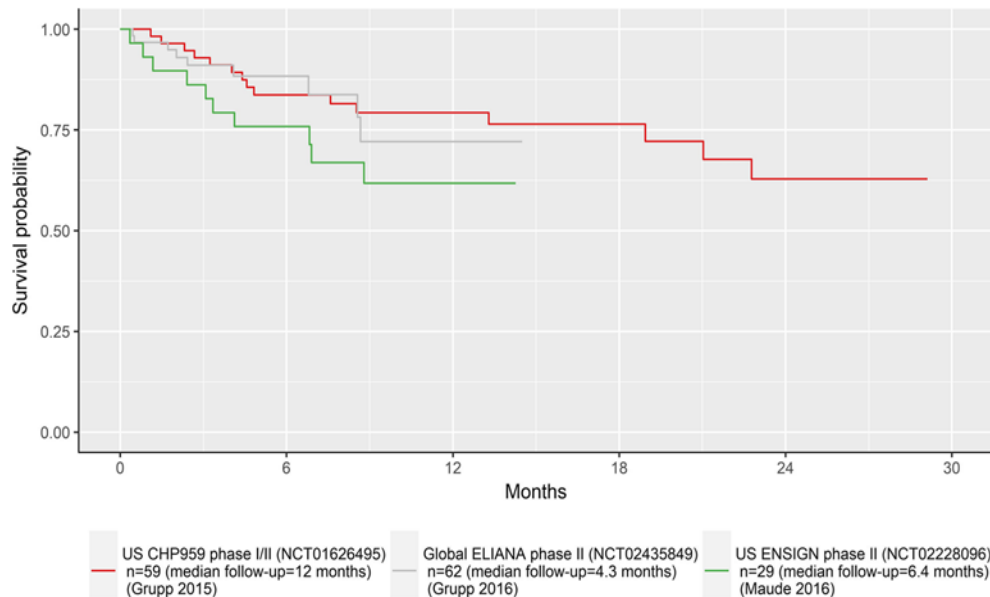
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Example: CAR-T therapy for children/young adults with relapsed/refractory acute lymphoblastic leukaemia

From: [Integrating expert opinion with clinical trial data to extrapolate long-term survival: a case study of CAR-T therapy for children and young adults with relapsed or refractory acute lymphoblastic leukemia](#) (Cope, et al, 2019)



- First CAR-T therapy approved by the FDA in this indication.
- Previous assessments of cost-effectiveness showed reimbursement decision was highly sensitive to choice of parametric model.
- Methods adapted from SHELF to obtain survival estimates. Combined with the empirical data to estimate long-term survival curves.

What are the requirements of SEE for HTA?

- Judgements are required for decision making in health.
 - To ensure accountability in decisions, these judgements should be made explicit and incorporated transparently into the decision making process.
 - Inherently Bayesian view on decision-making.
- Multiple methods exist for SEE.
 - Lack of empirical evidence on which methods are appropriate
- HTA processes may involve complexities and impose constraints that are relevant for SEE.
 - What are the considerations for SEE in this context?

Principles for SEE informing HTA

1. Transparency
2. Provide useful information for the decision problem
3. Aim for consistency but respect the constraints of the decision-making context
4. Reflect uncertainty at the individual expert level
5. Recognize and act on biases.
6. Suitable for experts who possess substantive skills and who are less likely be trained in probability and statistics
7. Recognize where adaptive skills are required
8. Recognize, and act on, between-expert variation
9. Promote high performance.

Using these principles to determine to dos, don'ts and maybes

- Recognise that this is an evolving area.
 - Applied studies are increasing in number
 - Empirical studies are likely to remain elusive
- HTA is a broad context
 - For rare diseases there may not be access to a sufficient pool of experts
- SEE is resource intensive if done properly
 - Need to consider how this can be integrated into HTA processes effectively

The 'York reference case' (the do's)

Element	Suggested reference method
Selecting quantities	Simple observable quantities should be elicited where possible Dependence between variables should be captured Wording should be clear and quantities should can be decomposed
Methods to encode judgements	Both variable interval methods or fixed interval methods can be used. Decision makers should aim for consistency
Selecting experts	Recruitment will be driven by the context; however, the elicitation should pursue diversity Focus on gathering substantive expertise or experience. Normative skills can be developed during training Minimize and record conflicts of interest At least 5 experts should be included
Piloting & training	Training is crucial and should focus on avoiding bias and expressing uncertainty. Piloting should be undertaken.

Element	Suggested reference method
Level & conduct of elicitation	<p>Beliefs should be elicited from experts individually, even if a group interaction follows. Interaction between experts should be structured through face-to-face sessions. Between-expert variation should be explored explicitly.</p> <p>Feedback to experts should be given during the elicitation.</p> <p>Following feedback, experts should be given an opportunity to revise their distributions, either during or after an elicitation session.</p>
Aggregation, analysis and post elicitation training	<p>Probability distributions should be fitted to individually elicited judgments.</p> <p>Following fitting, a summary of the individual distributions should be obtained using linear pooling with equal weighting of experts.</p> <p>Any adjustments applied should be to improve coherence and consistency and not to reduce variability. Rationales for how the experts made their judgments should be collected and recorded after elicitation.</p>

Additional considerations (maybes)

- Fixed interval methods may be more appropriate in some circumstances.
- Researchers may have limited access to sufficient experts, for example, in rare diseases.
- Adaptive skills may be required for new technologies.
- Group discussion may be optimum to generate a distribution, for example, in early technologies or when eliciting non-observable quantities.
- Practical constraints may dictate remote delivery of elicitation, for example, though video conferencing.
- Pooling methods, other than linear pooling, may better accommodate expert heterogeneity.
- Weighting of experts may be appropriate in some circumstances.

The don'ts

- Lack of a SEE protocol.
 - Specified methods with clear justification given context.
 - Decision makers should be assured of the quality of the elicited estimates.
- Not eliciting uncertainty.
 - Enable experts to distinguish uncertainty and variability.
- Failure to recognise bias in recruitment and selection of experts.
 - Failure to recognise the subjective nature of SEE.
 - In many instances cannot replace empirical evidence.
- Plan for the resource required to undertake SEE
 - May be unfeasible given the constraints of the process.
 - May need to prioritise what is elicited.

Things to consider

- How do we know if an SEE is accurate?
 - Challenge for determining minimum standards
- Where similar quantities are likely to be elicited on a frequent basis, HTA agencies may want to consider expert panels trained in elicitation
 - What would these panels look like?
 - Are there processes for using the existing (clinical) experts involved in HTA in a SEE?
- How can SEE be used in health care decision making more generally?