

# Are We Making Expert Use of Experts?



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## *A Review of Expert Elicitation in Survival Extrapolation*

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### Background & Rationale



Extrapolation of immature survival data is common within health technology assessments (HTAs) but is often associated with large uncertainty which can impact reimbursement decisions.



We conducted a systematic literature review to assess the use of structured expert elicitation (SEE) for long-term survival outcomes within healthcare decision making.



We identified common areas for improvement when conducting and reporting SEE for long-term survival outcomes.

### Search strategy - PRISMA

#### Databases searched

- MEDLINE (n=313), Embase (n=276), Web of Science (n=229),
- Citation searches: Forwards (n=19), Backwards (n=28) [1-3]

#### Unique articles (n= 353 + 47)

- Articles subject to screening according to title and abstract

#### Full-text review (n=40 + 1)

- Reasons for exclusion; SEE conducted on non-survival outcomes, no expert elicitation conducted as part of the study and SEE only referenced in general comments.

Studies included within the review (n= 10 + 1)

Searches were conducted according to the protocol published on the Open Science Framework. [4]

### Key messages

- Expert elicitation is a valuable approach when data is sparse or not available to inform the prediction of long-term survival outcomes.
- However, there is variable reporting and conduct of expert elicitation for long-term survival outcomes which reduces confidence in expert-derived quantities.
- Additional guidance for the elicitation of long-term survival outcomes is required.

### Data Extraction & Results



- Studies were reviewed to identify whether SEE was conducted versus whether general expert consultation was used.
- Information relating to six themes was extracted for studies conducting SEE.

#### Expert selection was variably reported

- One study did not report the number of experts consulted, otherwise the number of experts varied between one and 39. Generally the studies with higher numbers of experts were for surveys or general consultation.
- Description of expert experience varied. Some studies included details of expert length of practice within the disease area, others simply listed the experts in the acknowledgements.

#### Evidence dossier preparation was inconsistently reported

- Evidence dossier content was reported in varying levels of detail, but one study included the dossier, in full within the appendix.
- Generally, the broad topics were included within the dossier, but exact details of content were not outlined.
- It was not always clear whether existing model extrapolations were shown to experts prior to them making their judgements.

#### Elicitation approach based on the SHELF [5] framework in the majority of studies that conducted SEE

- Individual expert judgements were collected primarily as “lower and upper limits” with a mean/most-likely value.
- Two studies used virtual workshops, two used remote workshops and two studies did not report how the workshops were conducted.

#### Various formats of the long-term survival quantities were elicited within the studies

- This included;
  - Survival probability at time x years
  - Time that there are no remaining people at risk
  - Conditional survival
  - Mean lifetime survival

#### Expert judgements were aggregated via behavioural methods, weighted average methods or was not reported within the study

- The two studies which used behavioural aggregation included some description of expert rationale in order to reach the consensus.

#### Expert rationale was generally not discussed in detail, and discussion of the hazard was not included in any study

- Additional discussion of the hazard trend or other unique features of survival data was not included within any of the identified studies.



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### References

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