Are We SEEing It Yet? The Use of Structured Expert Elicitation Protocols for Decision Making

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INTRODUCTION

The parameters included in economic evaluations are often uncertain. The evidence may…

…not reflect final outcomes
Cancer treatments may be licensed on evidence of progression-free survival.

…not be well developed
Interventions may be administered via accelerated approval schemes.

…not be representative
Small trials with few people experiencing very mild or severe disease

- Failure to characterise parameter uncertain may give decision-makers a **misleading view** of the risks associated with their decision.
- Where data are uncertain, researchers often turn to stakeholders with substantive expertise related to the topic area. A review conducted in 2019 found that expert judgement was reported in **23 of 25** NICE STA publications (**92%**).[1]
- **Structured expert elicitation** (**SEE**) protocols have been developed to improve the transparency and consistency of reporting and mitigate the cognitive and motivational biases.
- This process is systematic and involves extracting expert judgements about unknown quantities and formulating this information as a **continuous probability distribution**.[2]
- Structured approaches can be used to inform parameters where evidence is limited. Appropriate candidates for elicitation include parameters that are **observable** and **contribute significantly to model uncertainty**, as well as those for which there is **sufficient expertise**. Examples include probabilities, time-to-event data and resource use.[2,3]

METHODS

- In 2022, the **National Institute for Health and Care Excellence** (**NICE**) revised its guidelines, recommending structured elicitation protocols to address evidence paucity.

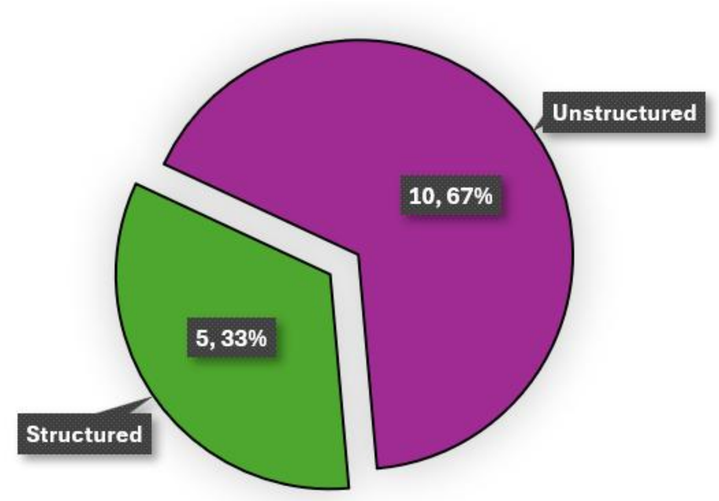
> "In the absence of empirical evidence…**expert elicitation can be used to provide evidence**…
>
> …**Structured methods are preferred** because they attempt to minimise biases and provide some indication of the uncertainty."

- Accordingly, a targeted review of **technology appraisal** (TA) **and highly specialised technology** (HST) submissions was undertaken between **2022** and **2025**. Submissions using the term "expert elicitation" were included.
- Where SEE protocols were used, information relating to elements of the procedure were extracted, as described in the ISPOR Task Force Good Practice Report [2] (**Table 1**).
- Submissions reporting unstructured approaches (e.g. advisory boards) were also examined to assess the rationale and frequency of use.

RESULTS

- Overall, **15 submissions** were identified that referred to 'expert elicitation', with **5 submissions** implementing SEE protocols to inform input parameters.
- Inclusion criteria for expert selection differed among submissions. Criteria included experience in using the intervention (HST33), experience practising in the UK (TA967) and relevant experts who were affiliated with centres recommended by NICE (TA1027).
- The findings indicate that structured protocols are not frequently implemented, with **two-thirds** of submissions opting for unstructured methods (**Figure 1**).
- Whilst recommended, SEE is often expensive, time-consuming and logistically challenging to implement owing to expert availability and the inherently demanding timelines associated with health technology assessment (HTA). Expert availability and feasibility challenges were noted as a rationale for employing unstructured elicitation methods in TA1011.
- Moreover, the level of detail provided varied across submissions (**Table 1**). One submission, HST18, also reportedly elicited cost and resource use data. However, no information about the methods employed was provided.

Figure 1: Submissions stratified by elicitation type



CONCLUSIONS

- Our review found that expert elicitation informed recent NICE submissions; however, unstructured approaches were more frequent.
- Where SEE was used, a lack of detailed methods reporting limited comparability between submissions. This also highlighted a lack of transparency in NICE HTA submissions.
- Failure to use a structured approach could have consequences for the appropriateness of the decisions made.
- Less resource-intensive SEE approaches are possible (e.g. remotely delivered or individual-level). In the future, companies could draw on this to increase the feasibility of SEE.

Table 1: SEE elements

Element	TA967	TA1027	HST28	HST33
Protocol	MRC	SHELF	IDEA	Modified Delphi
Types of Quantities Elicited	Simple Quantities (e.g. resource use)	Overall Survival	Disease Progression, Mortality, HRQoL and Resource Use	Occurrence of Disease and Overall Survival
Encoding Method	FIM (Chips and Bins)	Not Reported	Not Reported	Not Reported
Level of Elicitation	Individual	Not Reported	Not Reported	Group
Aggregation	Linear pooling	Behavioral	Mean of Experts' Second Round Responses	Not Reported
Interaction	Mix of No Interaction and Group	Yes	Mix of No Interaction and Group	Yes
Mode of Administration	Not Reported	Online and Face-to-Face	Face-to-Face	Not Reported
Sample Size	6	11	4	5

REFERENCES

1. van Hest *et al*. Trust the Experts? Acceptance of Expert Elicitation in the National Institute for Health and Care Excelennce (NICE) Single Technology Appraisal (STA) Process. Value in Health.**2.** Soares *et al.* Recommendations on the Use of Structured Expert Elicitation Protocols for Healthcare Decision Making: A Good Practices Report of an ISPOR Task Force. Value in Health. 2024. **3.** National Institute for Health and Care Excellence. NICE health technology evaluations: the manual. (2025)

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