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ISPOR Europe

Supplementing Evidence with Expert Beliefs: Within Health Sector Complexities and Considerations

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Use of experts' beliefs in global health

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Lack of data is a major challenge

- Data limitations are a challenge for decision modelling in any setting
- A survey of 110 researchers in LMICs identified lack of high-quality, local clinical data as the top technical challenge in economic evaluations (Luz et al 2018)
- Challenges extend across data related to baseline, treatment effect, cost, utilities…

Lack of data → Assumptions

Data shortfalls are overcome in several ways:

- Modellers making their own assumptions
- Informally incorporating opinions of local experts
- Identifying data considered the most representative from other settings and transfer it into the required context

Decision modelling in LMICs relies on expert judgement.

This reliance on experts isn't rigorous or systematic.

Soares et al. (2018) identify 21 applications of structured elicitation in model-based economic evaluations.

- Most done in the context of the UK
- Only 1 application not focused on HIC (Thailand)

Eliciting baseline information: Meeyai et al. (2015)

- Elicitation done as part of CEA on seasonal influenza vaccination in children in Thailand
- Elicited informative priors on baseline parameters such as the probability of immunity/infection at the start of the flu season
- Elicited using SHELF R packages
- Included 10 experts (clinicians & epidemiologists)

Eliciting baseline information: Meeyai et al. (2015)

S2 Figure: Example of an elicitation form.

Quantity	Attack rate (AR) of seasonal influenza
Definition	Proportion of persons in a population who experience influenza
Evidence	The Israel study estimated that the AR of seasonal influenza was between 5% to 15%. (ref.Barnea O, et al. Math BiosciEng2011) The AR of seasonal influenza in the UK and France was between 10% to 20% (ref.Truscott J, et al. J R Soc Interface 2012)

What percent of people in each age group have clinical cases of seasonal influenza		**Age groups**				
		0-23 months	**2-4years**	**5-14 years**	**15-59 years**	**>=60 years**
Plausible range	A. Realistically, what do you think the lowest value could be?					
	A. Realistically, what do you think the highest value could be?					
Median	A. What would be the most likely number? (considering range fromA toB)					
Lower and upper quartiles	A. What would be the lower quartile? (considering range fromA toC)					
	A. What would be the lower quartile? (considering range fromC toB)					

Eliciting treatment effects: Colson et al. (2015)

- Elicitation done to understand outcomes associated with fistula repair in different settings
- Presented experts with 5 different clinical scenarios and asked about frequency of long-term disability if treated in different settings (high-volume centre, low-volume centre, untreated)
- Judgements aggregated using Cooke's Classical Model
- Included 9 experts (urologists & gynaecologists)

Eliciting treatment effects: Colson et al. (2015)

An 18 year-old woman had obstructed labor and delivery of a stillbirth one month ago. She has a large vesicovaginal fistula that obliterated the anterior vaginal wall, resulting in total loss of the urethra. Upon examination, she has involvement of both ureters, with partial obstruction of one. The main long term complications are constant leakage of urine (urinary incontinence) and functional loss of a kidney.

Given 1000 such cases, how many would develop long-term renal dysfunction in the following settings:

1. If treated in a high-volume fistula center staffed with an expert fistula surgeon?

5%	25%	50%	75%	95%

Huge potential for SEE in global health

- Elicitation is a means to expand the potential evidence base AND better utilise local expertise (in both HICs and LMICs).
- Need reference methods (and more applied examples) of SEE in this setting, considering different time and resource constraints.
- Opportunities for novel ways to combine experts with existing data.
- Also opportunities to improve use of experts in model structuring (particularly in less well-defined interventions like health system strengthening).

Poll Question 3

What specific challenges do you envisage in using structured expert elicitation outside of a national level HTA context?

- Availability of suitable experts
- High levels of biases in experts available
- Time/resource constraints to conduct SEE
- Complexity in choice of suitable quantities to elicit

Thank you!

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