



Comment on “Deterministic Sensitivity Analysis Under Ignorance”

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Dear Editor,

We welcome the comment [1] on our article [3] on deterministic sensitivity analysis (DSA) as it provides some interesting points for discussions regarding performing DSA under ignorance. The comment indicates that under complete ignorance, it is not rational to apply a distributional or probabilistic DSA, because the underlying distributions are not known, and that ‘all variables to which uniform probability distributions would be applied otherwise due to a lack of information on probabilities appear to be candidates for the classic tornado diagram.’ We agree that probability distributions should not just be assumed in situations of total ignorance. However, we do not think it is that common that situations of total ignorance occur within cost-effectiveness models. In most situations there is some information on the probability distribution, and formal methods exist to elicit probability distributions from experts in cases where information is lacking. Additionally, good modeling practice guidelines advocate modelers take into account all parameters that are associated with uncertainty, especially when there is little information. The ISPOR Modeling Good Research Practices Task Force Report 6 on uncertainty states that in those cases where there is very little information on a parameter, a conservative approach should be adopted such that the absence

of evidence is reflected in a very broad range of possible estimates [2]. This is exactly what we advocate in our paper: a broad range of possible estimates is provided through the use of intermediate steps between the set minimum and maximum values [3]. This is especially relevant in those cases where probability distributions are not known, given that in those cases, the extreme values are most likely not known either (or they are at least very uncertain). As we also indicate in the paper, minimum and maximum values are often chosen arbitrarily. If minimum and maximum values are arbitrary and/or uncertain, it is very helpful for decision-makers to know the outcomes of their decision models under alternative minimum and maximum scenarios. Note that this is also in line with the lifecycle dynamics that the author speaks of; a stepwise DSA shows alternative scenarios for minimum and maximum values that decision-makers may need to consider.

Declarations

Conflict of interest The authors declare no conflicts of interest relevant to this correspondence.

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