Reviewer’s report

Title: Using Value of Information to guide evaluation of decision supports for differential diagnosis: Is it time for a new look?

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Reviewer: Padmanabhan Ramnarayan

Reviewer’s report:

The authors propose an alternative method of evaluating the benefit of diagnostic decision support tools, namely maximising the value of information (VOI). In general, the article is well written, although I have a few suggestions for improvement.

Major compulsory revisions

1. It would be useful for the reader to have some description of VOI in the background, so that they may understand more about the technique. I am not sure clinical readers will know much about VOI. Where is it used in other areas of clinical medicine, how is it used etc.

Minor essential revisions

1. In figure 1, it may be useful to depict the case example described in the article (chest pain) and how each of the differential diagnoses changes the curve.

2. Figure 2 has no legend, and this may be useful to clarify for the reader what the figure shows.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I am a part-time employee of Isabel Healthcare, a commercial differential diagnosis software, and advise them on clinical aspects. I also hold limited stock options with Isabel Healthcare.