Reviewer's report

Title: Understanding test accuracy research: a test consequence graphic

Version: 0 Date: 26 Oct 2017

Reviewer: Gea Holtman

Reviewer's report:

Thank you for the opportunity to review the paper by Whiting and Davenport entitled: 'Understanding test accuracy research: a test consequence graphic'. The authors have presented a tool that might be very helpful for researchers and clinicians to understand the clinic impact of a diagnostic test. However, I have two major issues that I would like to see addressed.

As mentioned in the methods of the paper, similar methods to present the results are already used in systematic reviews. There are also papers which incorporate test consequences (Schouten et al 2013 BMJ; Abba et al 2011 The Cochrane Library; Holtman et al 2016 Pediatrics). Therefore, it is important to focus the paper more on what it adds to existing methods. In my opinion the added value may be the lay-out of the graphic and the fact that researchers or clinicians can enter the prevalence, sensitivity and specificity and then the tool automatically calculates the numbers in the diagram. A online tool to produce these diagrams would be great. However, I would like to see more evidence why the graphic emerged as a clear preference from a range of methods for presenting probabilistic information.

The methods of the development of the figure is unclear. The authors used a mixed methods approach. However, it is unclear how the focus group, user testing and web based survey were performed and what the results were (e.g. what were the questions, how many representatives participated, what was the reason to refine the graphic etc.). The methods and results section in the abstract and manuscript should describe this instead of the explanation of the figure (the headings structure and data required can be shortened).

Minor comment

The white text in figure 1 and 2 is unclear.
Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments
which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal