Reviewer's report

Title: Understanding test accuracy research: a test consequence graphic

Version: 0 Date: 15 Nov 2017

Reviewer: Matthew Thompson

Reviewer's report:

This is an interesting paper. Diagnostic researchers have struggled to communicate results of accuracy studies with clinicians, and there is an even greater gap with patients. This leads to generally a lack of understanding of accuracy estimates among the vast majority of physicians (as noted in various publications). The authors propose a novel way of presenting results using natural frequencies. Although many of us use natural frequencies to teach this concept to students and others, the authors have taken an additional step in illustrating the meaning of consequences of false/true positives/negatives. This seemed simple yet effective, and a novel way of presenting this. I would certainly see this being a highly useful teaching tool. I was less sure about the accompanying text examples, but that is perhaps where some further adjustment could be made to ensure it is as easy to interpret as possible.

As the authors acknowledge, a single figure is more difficult to use with multiple cut offs, when prevalence not known, when it is more than 2x3 table eg with intermediate results. However, perhaps it would be too much to expect one figure to do everything.

Obviously a next step would be to test this figure or compare with other methods for displaying results of diagnostic studies, to see what clinicians understand better, and then similarly with patients. You could also explore on line versions of this that could be populated and changed as needed for researchers to use to create these graphics.

I thought the paper was well written, it is simple and brief and does not try to go further than the presentation of this novel method, which is appropriate. No edits suggested
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An article of importance in its field

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

Acceptable

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