Reviewer’s report

Title: Treatment Use in Prognostic Model Research: a Systematic Review of Cardiovascular Prognostic Studies

Version: 0 Date: 02 Aug 2017

Reviewer: Laura Bonnett

Reviewer’s report:

This is an excellent article summarising the way treatment is handled in prognostic model research. My specific comments are as follows:

1. Abstract: Research - The first two statements feel speculative given that they appear before the results of the systematic review. I would therefore suggest that the authors move these to the end of this section.

2. Abstract: Conclusions - The statement "is often ignored" does not truly reflect the findings in my opinion. For example 70% of studies did mention treatment use. Therefore, the authors should modify the conclusions section of the abstract to more accurately reflect the results.

3. Methods: 2.1, Line 66 - I believe there is a word missing between "as well" and "direct targeted".

4. Methods, 2.1.3, Line 139 - Again, I think that there is a word missing between "lower than it would" and "been, had they..."

5. Methods, 2.2.2 - Please make it clear whether these methods of data extraction relate to the original review or to this current systematic review. I believe they relate to the current review based on the authors involved in the extraction but it needs to be clarified within the text.

6. Table 1 - The footnote suggests that the percentages are not reported, however the final two rows of the table include percentages. Therefore, the authors should be explicit as to how they have estimated these percentages.

7. Results, 3.2.1-3.2.3 - The authors should define what they mean by each of these study types.

8. Results, 3.2.3 - What do the authors mean by "incident surgical procedures"?

9. Table 2 - It would be more mathematically pleasing if the subcategory percentages added up to 100. Therefore, it would be helpful to add a fourth category of "other" to assist with this.

10. Table 3 - What do the authors mean by the starred footnote? It is not clear to me.
11. Discussion, page 16, first paragraph - The final two sentence (lines 299 and 300) are unclear to me. Do the authors mean people who are not on treatment? The clarity of this section should be improved.

12. Discussion, page 16, second paragraph - Within lines 302-303 the authors discuss this review as the first overview of how treatment information has been reported. However, the authors have already referenced a review (13) which considered external model validation studies. Therefore, the authors should clarify what makes their review unique. I presume it is because they have considered development studies as well as external validation ones?

13. Discussion, page 16, final line - Unjustified statements suggesting which clinical field might be most advanced should be avoided in my opinion.

14. Figure 4 - The authors should talk about the Figure rather than just including it. This would help to clarify each point within it. For example, what is "sufficient information of treatment use"? Why is inverse probability weighting the most appropriate recommendation for guided treatments?

15. Conclusion - I think that the authors should be more specific. As per the abstract, 70% of studies did mention treatment use so statements suggesting that treatment use within prognostic models has yet to be widely recognised are not strictly true. Therefore, the authors should be specific about the current lack of appropriate reporting and conscious inclusion or exclusion of treatment within models.

16. Figure 3 - This would benefit from an improved legend. Reported and not reported relate to treatment I presume, but it would be helpful to more carefully define the two groups.

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