Reviewer’s report

Title: Dynamic prediction of repeated events data based on landmarking model: application to colorectal liver metastases data

Version: 1 Date: 23 Oct 2018

Reviewer: Krithika Suresh

Reviewer's report:

Based on the reviewer comments, the authors have supplemented the information introducing DPOs and competing methods for dynamic prediction with repeated events data. The authors have made it clearer that existing methods cannot be used in situations where the number of repeated events and the risk of the terminal event are predicted in parallel.

The paragraph starting at line 108 introducing DPOs is necessary but is very difficult to understand and requires editing for both clarity and grammar. It is still not clear from this description what DPOs are, and thus makes it difficult to understand the motivation of using them.

Line 119: Clarify what "terminal event issue" is. This paragraph should have the following clearly stated:

(a) What exactly is the issue that DPOs addresses

(b) What is the motivation of using them in the repeated events context and how do they address the issue described

(c) What benefit do they provide over existing methods

Line 399: The phrase "predicted probabilities wiggly" is awkward.

Line 401: Is it possible to provide an example of when bias and efficiency are superior? Otherwise it is not convincing that the "wiggly" behavior is a disadvantage and that the smooth behavior of the DPOs is preferable.

Line 404–405: Clarify "details of hazards" and "model misspecifications". Are you referring to deviations from the proportional hazards assumption as mentioned in the beginning of the paragraph or are there other situations? Was model misspecification considered in the simulation study?
Line 420-421: Bias-variance trade-off is not clear here. It seems possible that with the smoothers the model is actually borrowing information from other time points.

The paper presents interesting ideas but is difficult to read due to both clarity and grammar and requires further editing.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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