Reviewer's report

Title: Derivation and assessment of risk prediction models using case-cohort data

Version: 2 Date: 22 June 2013

Reviewer: Harald Binder

Reviewer's report:

Major Compulsory Revisions:
While I agree with your argument that the overall bias, comprising a bias due case-cohort based parameter estimation and case-cohort based performance estimation, is of interest in some settings, it is a pity that you addressed this only in your comment and not in the manuscript itself. Your statement that "since our cohort is of substantial size, there is little difference between the model derived from full data and that derived from case-cohort samples" should actually be part of the paper and be supported by empirical results.

In addition, it doesn't seem to me that the distinction between the two biases is not important to the paper. For example, you are using a rather indirect way of argumentation for supporting your claim "we conclude that this bias is introduced due to the procedure for estimating D rather than overfitting" (p. 17). This really calls for separately considering both sources of bias in the empirical investigation, and therefore I strongly suggest to add such results to the paper.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests