Reviewer’s report

Title: Validation of the CancerMath prognostic tool for breast cancer in Southeast Asia

Version: 1 Date: 13 Jul 2016

Reviewer: Gareth Ambler

Reviewer's report:

This study validates the CancerMath prognostic tool for breast cancer. There are two types of validation, the first for the (binary) outcome nodal status and the second for survival. I discuss each separately.

The researchers validate the nodal status calculator by constructing a calibration plot and calculating the AUC. This approach is appropriate but I think it would be improved if the researchers also presented the ROC curve. Also, the researchers should quantify or comment on the under-estimation in the calibration plot. A comment regarding the 'calibration slope' (see Miller, Statistics in Medicine, 1991) would also be helpful.

The researchers validate the survival calculators in the same way as nodal status which I found surprising since these methods do not take account of censoring. I was further confused by the researchers' responses to Reviewer #1. They say that only patients from 2007 and earlier were included in the validation of the 5-year survival calculator and that no individual had a follow-up length shorter than 5 years. This is unusual as there is almost always loss to follow-up (censoring) in such studies; omitting censored patients would lead to the observed survival estimates being biased downwards (towards worse survival). I also note that the omission of more recent patients (2008 onwards) is not necessary as such patients could be censored at the end of their follow-up. Similar comments apply to the validation of the other survival calculators. A related point concerns the choice of measures for the survival validation. I would expect to see Kaplan-Meier curves to illustrate observed survival and the c-index (not AUC) to quantify discrimination. The use of the c-index is alluded to but its calculation is not described correctly.
I have a few comments regarding the Tables. Please add the denominators ('N') to Table 1. I note that the 'Observed deaths' in Tables 2-4 are not adjusted for censoring and hence the Mortality Ratio is likely to be misleading.

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

Unable to assess

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Yes

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