Reviewer's report

Title: An Investigation of the Apparent Breast Cancer Epidemic in France: Screening and incidence trends in birth cohorts

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Reviewer: My von Euler-Chelpin

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Although the authors have revised substantial parts of the manuscript, my main concern still remains, namely the use of the, to this study, central terms false positive and overdiagnosis. I will limit my comments to this issue.

Major Compulsory Revisions:

The comments refer to Page 5.

1. The authors still define false positives as "number of women diagnosed with cancer that would not progress to clinical detection in their lifetime". This is not a definition of false positives but a definition of overdiagnosis.

2. It seems that the authors at this point use the definition, not for mammography or screening mammography, but for histology. If the test is histology and the disease that the test is supposed to find is not breast cancer but progressive breast cancer, then one could say that the specificity is unknown. This due to that the breast cancers found by histology will typically be treated, and there is no way of knowing whether they would have progressed or not.

3. If however, tests are set up to find breast cancer then a false positive test refers to a test that at recall and further investigation is found to be negative, i.e. not diagnosed with breast cancer. When it is not possible to distinguish between progressive and non-progressive breast cancers, some of the true positives may have had non-progressive breast cancer and hence treated unnecessarily, i.e. overdiagnosis.

4. The authors state that ‘All false positives obtained after histology are overdiagnosis’. If a person is actually considered to have had a false positive test after histology, it is a negative test, i.e. a person without cancer, or, if using the authors definition (see above) no false positives can be ‘obtained’ after histology.

5. The authors further state that ‘Overdiagnosis thus includes false positives at histology testing as well as those cancers that would never cause symptoms or death during a patient’s life time.’ On page 4 the authors define false positives at histology as the number of women diagnosed with a cancer that would not progress to clinical detection in their lifetime. How do the authors differentiate between these definitions?
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests