Reviewer’s report

Title: Development of breast cancer mortality, considering the implementation of mammography screening programs - a comparison of western European countries

Version: 0 Date: 05 Feb 2019

Reviewer: Elsebeth Lynge

Reviewer's report:
This is a valid attempt to however, very crude, and the results are presented in a way where it is difficult to compare with the outcome of other studies.

The key point is that screening, if it works, affects birth cohorts offered screening and not age-groups. I wonder why the authors have focused on age-groups. Proxy cohort data could be form from the WHO data tabulated by 5-years age groups combined with 5-year calendar periods, starting with year of screening implementation. I acknowledge that the authors' Poisson regression includes a variable "years with MSP", but in the age-group 50-59 this makes limited sense, as the program constantly recruits new 50-years old women.

The outcome measure as "estimated yearly RR" is also difficult to compare with eg results of the RCTs. Furthermore, if we expect an effect of screening, it is probably not in the form of a slope, where breast cancer mortality would eventually disappear. It is more in terms of an effect of a certain size. Results should be presented eg as estimated effect of 10 years of screening.

Given that Artier et al, 2011 presented a somewhat similar analysis coming to the opposite conclusion, the authors should address much more in detail why these studies show different results. Length of follow-up may play a role.

The use of crude - and not incidence-based - mortality data should be discussed. The introduction should be shortened considerably.

The authors should reconsider their work taking these comments into account.

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

No

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

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No

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 recommend additional statistical review

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