Reviewer’s report

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

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Reviewer: Jacques Fracheboud

Reviewer's report:
Interesting manuscript that tries to establish correlations between the implementation of national mammography screening programmes in 14 European countries and breast cancer mortality trends using Jointpoint analyses with data from the IARC database. Similar analyses have been done before for single countries, among others by Otten et al. for the Netherlands (Int J Cancer 2008; surprisingly not referred to), who came to the same conclusion: a negative (decline) trend change in mortality related to the implementation of the mammography screening programme.

The manuscript is well-structured and carefully described. Comments in detail:

Introduction, P3, one but last sentence: "in small clinics" can be questioned; opportunistic screening is also provided by large and even university clinics. But I wonder if the authors do not mean "small (reading) volume", as this is an important difference between opportunistic and organized screening in countries with a strongly centralized screening organisation.

Table 1: A 1-year implementation period is not very realistic. Geographical coverage, e.g. everywhere in the country, screening has started, and target population coverage (all targeted women has been invited al least once) might be mixed up. Age ranges changed after (Netherlands from 50-69 to 50-74; UK, the latter starting since several years before the age of 50) or during the implementation (France started also with 50-69).

Methods, P4/5: The first analysis is done country-specific, whereas the second and third take all countries into account. This should somewhere be mentioned. I am not sure that I fully understand "interrupted time series", but this is possibly due to my limited knowledge of the Joinpoint application and my statistical skills.

Results, P5/6: the description of Figure 1 looks a bit random. Countries as Italy, Norway and Sweden were not mentioned at all. From all three countries observational studies were available that found a positive impact on breast cancer mortality. In particular Sweden, the pioneer in breast cancer screening that started before opportunistic screening became widespread is interesting as it looks like having no effect. As Sweden has the longest period of "years with MSP" and the impact of this variable seems to be not so small, this should be discussed in the Discussion section.

Discussion, P8, last para: what do you mean with "relatively small dataset"?
The authors conclude that "the implementation of MSPs has contributed to the reduction of breast cancer mortality". This is, however, not for all countries in Figure 1 the case; some of them with important, large programs of good quality do hardly show any trend change (Italy) in breast cancer mortality after the implementation of screening or not for both targeted age groups (Sweden). This should be discussed in order to justify the general conclusion.

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