Reviewer’s report

Title: Comparing trends in mortality from cardiovascular disease and cancer in the United Kingdom, 1983-2013: joinpoint regression analysis

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Reviewer: Martin O'Flaherty

Reviewer's report:

This is an interesting time trends study highlighting the changing landscape in causes of deaths, and the fact that for many populations CVD is becoming second in mortality burden impact in many populations.

The study is thus making visible an important phenomenon that might be of importance to further generate hypothesis on the drivers of these diseases at population level.

Some comments and suggestions:

1. The joinpoint analysis is correct but needs to be better described and explained. I would like to see more details on the model selection methods and the actual model selection data, available from joinpoint software.

2. The latest version of JP allows the user to test for convergence and parallelism. I would strongly suggest the authors to present the results of these analysis, that I am sure will provide more formal support to the crossing trends observed. (although it is rather obvious in the graphical presentation)

3. The analysis of cancer type deaths is missing some opportunities for shedding light on potential drivers. For example, grouping diet/obesity related cancers together could show interesting trends. And compare to cancers that do not share determinants with CVD.
4. Following on the above, there is now a strong consensus (Eg Richmond group recent report, WHO 25x25 targets) that a substantial proportions of cancers can be prevented by targeting the dietary and behavioural determinants shared with CVD (diet, alcohol and smoking mianly) in this line, the above suggestion for analysis might provide interesting results to comment on these issues. This descriptive epidemiology analysis have value when they suggest interesting hypothesis for future research.

5. I would suggest to elaborate more on the discussion on the potential drivers, again considering that some cancers share determinants with CVD. This also gives the authors the opportunity to discuss the different lag times of the disease. Eg, declining smoking prevalence is having a faster impact on CVD mortality than in lung cancer mortality, so the current trends might still not reflecting these changes. This is important to speculate on future burden based on current trends.

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