Reviewer’s report

Title: Time trends in socioeconomic inequalities in cancer mortality: results from a 35 year prospective study in British men

Version: 2 Date: 4 April 2014

Reviewer: Sandi Pruitt

Reviewer’s report:

This manuscript presents results of an analysis of a large, ongoing prospective study of British men (n=7489) who have been followed for 35 years. The large sample size and length of follow-up are a strength of this study. The goal of this study was to investigate whether socioeconomic differences in cancer mortality have persisted over this time, from 1978-80 to 2013.

Overall, this is a clearly written manuscript reporting that social class inequalities have persisted over 35 years. My primary concern with the manuscript is that it is written in the style of a government report. The authors could greatly improve the impact of their manuscript by providing more context regarding inequalities in Britain and why they persist, and being more thoughtful regarding the causes of observed inequalities, and potential future research directions and/or policy to address observed inequalities. Alternatively, they could address inequalities in cancer vs. other mortality or suggest some future research ideas. Currently, I’m left wondering why the literature needs another study saying inequalities aren’t going away. Adding some thoughtful discussion of the above would help with this problem.

Major Compulsory Revisions

1. Statistical Analysis: No rationale is provided to describe why the authors collapsed social class into two groups. At a minimum, some description of what these categories include, how they were collapsed, and citations to other relevant literature regarding the validity of these two categories is needed. It is difficult to interpret the meaning of these categories without this additional information.

2. Statistical Analysis: Similarly to the above, no rationale is provided as to why the follow-up time was divided into three calendar periods. Without a clear rationale, I am left wondering why this was done. It is also not clearly addressed why the authors chose to fit Cox models separately by these time periods. Why didn’t the authors conduct time trend analyses, such as joinpoint regression? Joinpoint would provide a more robust test of trends over time and is not subject to the making of arbitrary stratifications over time; as these methods analyze trends over the entirety of the follow-up period.

a. Relatedly, in the Discussion on Page 7, the authors state their results showed “no change in inequalities in cancer mortality.” I take issue with this statement as the authors did not conduct a formal test of this. They did clearly demonstrate that inequalities persisted; but they did not test the size of the inequality across
the time periods.

3. Results: No Table 1 or other information is provided regarding characteristics of the sample. Even if this cohort has previously been described in other manuscripts, it is necessary to provide a table and description of the sample by manual vs. non-manual occupational status, because this is the primary independent variable of this study.

Minor Essential Revisions

1. Introduction: While I’m certain the authors had an a priori reason to examine smoking-related and non-smoking related mortality separately, it isn’t clear in the introduction. Moreover, it isn’t very thoughtfully discussed in the Discussion either.

2. I think the fact that they had “imprecise data on exact date of diagnosis of cancers” should be explained in more detail. Why wasn’t the cohort data linked to cancer registries? This should be described as a clear limitation; as it also means that the authors could not analyze results by cause of death (all-cause or cause-specific).

3. Methods: clearly state the latest date of most recent follow-up used in this analysis.

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