Reviewer's report

Title: Individual education, area income, and mortality and recurrence of myocardial infarction in a Medicare cohort: The National Longitudinal Mortality Study

Version: 2
Date: 23 April 2014
Reviewer: Andrew Rundle

Reviewer's report:

The authors do not satisfactorily respond to the critiques.

Major Compulsory Revisions

In regards to the 15% of the subjects that fail to match across databases, in their cover letter the authors clearly show that the non-matching subjects differ significantly from the matched subjects and appear to be of substantially lower socio-economic status. This raises significant concerns regarding bias. Having documented the potential for bias the authors then decline to employ any of the standard approaches to assessing and adjusting for this bias - this response is far outside the current norms for attempting to make causal inferences. The authors write "We would therefore prefer to retain the original weights for more conservative results." the issue is not whether their results are conservative but whether they are incorrect and misleading. If they feel like being "conservative" they should conduct sensitivity analyses for their key findings and then come up with some clever rhetorical flourish as to why the reader should put more weight on the results that are likely biased.

In their responses to critique 5 the authors use the rhetorical flourish of describing their study as "hypothesis generating" as a way to deflect the critique. Yet their discussion describes no new hypotheses that they have developed based on their mass stratified analyses. If this was a hypothesis generating exercise then the elucidation of some hypotheses seems warranted. Based on the reported CI one assumes the authors will need a study even larger than the NLMS-Medicare data set to test these hypotheses.

Minor Essential Revisions

The introduction does a better job explaining that MI is an important and prevalent health occurrence but still don't contextualize their results in the sense that we would expect to see an SES gradient for mortality for individuals regardless of MI status.

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