Reviewer's report

**Title:** Cross-sectional associations between residential socio-environmental exposures and cardiovascular diseases

**Version:** 2  **Date:** 1 October 2014

**Reviewer:** Mark Rosenberg

**Reviewer's report:**

Major Compulsory Revisions

While the authors might be correct that this is arguably the first paper to associate CVD with individual and neighbourhood level variables using multi-level modelling, it is far from the first paper to demonstrate cross-sectional results of individual and neighbourhood level variables using multi-level modelling to explain a variety of general (e.g., self-assessed health or quality of life) or specific health outcomes. Second, what is missing from this paper and indeed many previous papers is a coherent theory to guide the choice of variables. What this paper does as do many of the other papers of this genre is follow past practice but this is not the same as having a coherent theory or model to guide variable selection. Third, what is mainly absent from the analysis are the statistics that explain the partial and overall fit of the models. In much of the previous research using multi-level modelling of which I am aware, what has often been case is that the socio-economic and behavioural factors linked to the individual explain most of the explained variance and the neighbourhood factors which are retained in the models explain only a small proportion of the variance. It also common that the overall variance explained is relatively small. In fact the Model 4 results which the authors tend to discount in their discussion seem to support this observation that neighbourhood factors might not be as important as behavioural factors. This point is also supported by the smoking variable (not discussed) which is significant and has higher odds associated with increased CVD than any of the neighbourhood characteristic variables except the distance to a major road and noise variables.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.