Reviewers report

Title: Measurement and explanation of socioeconomic inequality in catastrophic health care expenditure: evidence from rural area of Shaanxi Province

Version: 4 Date: 4 December 2014

Reviewer: Paul Marschall

Reviewers report:

Major Compulsory Revisions
1. Abstract
   a. Background
      i. Estimation of the change in household catastrophic care expenditures (line 37): The reader gets the impression, that within the paper the expenditure change is analysed for each household. This is not true, because effects are only analysed on an aggregated level. You should also consider this point in the introduction and methods’ section
   b. Methods
      i. Include information about the included regression
   c. Results
      i. It is unclear if “inequality” only refers to CHE
   d. Conclusion
      i. China is a large country. Your analyses concentrate on Shaanxi Province. It would me more appropriate if you could compare the situation in Shaanxi to the rest of the country (lines 52-53) – also consider that in the paper!

2. Introduction
   a. Per capita income (line 65): Even if “per capita income is far behind the eastern areas of China” it can be expected that the PPP in rural areas is quite different compared to more prosperous regions.
   b. Concentration index (line 101): Provide some further background information about that concept in your paper

3. Methods:
   a. Study design:
      i. You should introduce the study area in more detail
      ii. Give some information about the variables you used and what kind of information they covered
      iii. Please state if there are any methodological changes at the survey level between both data collections (2008 & 2013)
      iv. Provide some background information about how OOPs were covered in the
survey
b. Statistical health care expenditure
i. Non-subsistence expenditure/ total household expenditure: It is not clear, if all income components are included in the survey. If not, this could cause a severe bias
ii. Was “household size” considered in the analyses?
c. Methods to measure CHE inequality
i. Please introduce the concentration index approach (line 159)
4. Results:
a. Catastrophic health care expenditure
i. Explain the currency conversion to USD 492.10 (table 2; line 204). Did you consider PPP?
5. Discussion
a. The reader gets the impression that you only analysed determinants of CHE in general (line 283). However, it could be a good idea to add some further analyses about how the change in your study area can be explained. What are the influencing factors? In addition, changes at the population level must be considered – as a consequence of migration and/or fertility for the structure?
b. Limitations: Please explain consequences of missing information in more detail (severity of problem) (line 259)
c. It is quite astonishing that no further data problems are mentioned
Minor Essential Revisions
a. Introduction
a. Define non-subsistence income (line 72)
b. Universal health coverage and insurance schemes (line 83): Provide some further information about the corresponding health financing
b. Methods
a. Methods to measure CHE inequality: Income-related factors (line 172): give some examples; did you consider them in your paper?
c. Conclusion
a. “Message” should be improved. What are the recommendations for the regional level? What is possible? The direct link between Shanxi Province and the national level is not clear.
Discretionary Revisions
a. Result – Decomposition of socio-related inequality – please explain meaning of subscript CHE in Ln odds CHE (line 236)

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