Reviewer’s report

Title: Ecological analysis of health care utilisation for China's rural population: association with a rural county’s socioeconomic characteristics

Version: 3 Date: 11 August 2010

Reviewer: Jane Zhu

Reviewer’s report:

The authors addressed two significant questions raised in my prior review: 1) explaining the study methodology and 2) relevance of findings given China’s rural healthcare reform and availability of a more recent NHSS survey.

Major compulsory revisions:
- Discussion about drug use and medical expenses seems disjointed from the rest of the section and is not supported by any findings.
- The study's main conclusion is that "use of health care was correlated with worsening health status" - many many studies have shown this to be true. It is still unclear what new information is added to the literature here.

Overall: simple cross-sectional ecological associations are confounded by ecological fallacy, which the author recognized. This is a very significant disadvantage in interpreting results; confounding is harder to characterize because it consists of both within-area and between-area components. There are various methodologies to reduce this bias - unclear that the author explored these statistical methods? It would be helpful to the reader if these concerns are discussed more in the text including type(s) of potential ecologic biases and what if anything was done to address them.

Temporal ecological data would be more robust if ecological analysis must be used; analyzing the 2008 data in comparison to 2003 would strengthen this paper.

Level of interest: An article whose findings are important to those with closely related research interests

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests