Reviewer’s report

Title: The Impact of Rural-to-urban Migration on The New Cooperative Medical Scheme in China -- A Neglected Issue

Version: 2 Date: 27 February 2011

Reviewer: Weiyan Jian

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Major Compulsory Revisions

The issue of insurance for migration is important in contemporary China. New Cooperation Medical Scheme (NCMS), as the major type of health insurance system in rural China, plays an important role to improve migration’s insurance. So topic of the current study is interesting and can provide evidences for policy-making. However, the analysis and discussion in the current paper need to be revised to really further our understanding on this topic. I would like to give some comments and suggestions below.

1. Since migration and non-migration were not randomly allocated, these two groups may be completely different populations. That means there would be serious bias to evaluate the effects of migration on participation of NCMS by directly comparing enrollment rate between these two groups. Under this circumstance, regression methodology is not enough to balance or control the differences in these two groups, and the results and conclusions in the study were specious. To solve this problem, differences-in-differences (DD) design should be introduced. However, if the authors only have cross-sectional data, (the authors had mentioned that this study “was a cross-sectional study”), the DD methodology cannot be carried out. That is a dilemma. So the real severe limitation in the current study is not “only reflecting a point situation instead of giving a whole picture of how it changes overtime”. The real limitation is that, the current design is difficult to provide a credible evaluation.

2. The observations in this study were “households”. The authors may consider that “the unit of enrollment of NCMS is at household level” and chose such design. However, using household as observation limited important individual variables (like age, disease(s) history) into regression. In theory, these individual factors have sufficiently significant to affect the participation willing of health insurance, so should not be ignored.

3. I am not sure whether the authors want to evaluate the direct effect of migration on the participation of NCMS. If so, since the authors were aware that “migration might have a positive impact on household economic status which would in turn potentially improve the enrollment rate in the NCMS of families”, the “household economic status”, as an important confounding factor, should be control. At least, the enrollment of the NCMS in different economic levels should be analyzed respectively.
4. In Table 5, based on the authors' understanding, to a certain extent, “Household migration rate” and “Household economic status” have cause-effect relationship. Therefore, they should not be in regression function at the same time as dependent variables, otherwise it produces Multicollinearity.

5. In China, some local policies on migration health insurance have released. In some regions, the pilots of health insurance systems integration have been implemented. All these things, including international experiences on this issue, should be taken into account. They can be talked about in the Background and (or) Discussion section(s).

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

**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.