Reviewer’s report

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

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Reviewer: Rachel Tolhurst

Reviewer’s report:

This is an interesting and generally well-written paper, which makes an important contribution to the literature on health insurance in China by providing empirical data on the position and behaviour of migrants in the NCMS scheme.

Major essential revisions:

1. The questions posed by the authors are well-defined and the methods seem appropriate to answer these questions, though I do not feel qualified to comment on the appropriateness of the different regression models employed. In general the methods are well described, although there are several issues that need addressing:

   a) In the definition of migrants (page 7, section 2.1) was any minimum period defined for living or working away from the place of the individual’s hukou?

   b) In the definition of people who suffered major illness (page 7, section 2.1) it is not clear how disability was defined – was this self-identified or physician-diagnosed?

   c) It is not clear how and on what basis the study counties were selected (in section 2.2, page 7). The rationale for the selection of provinces is given but not the counties within them.

2. The data appear to be sound, although I would like more discussion of the interpretation of Table 4. The authors assert that the association of migration with higher economic status shows that migration had a positive economic impact on the household (pages 12 and 13 and elsewhere in the paper). I don’t think that the figures clearly establish such causal direction of the association. Have the authors considered the interpretation that better-off families are more able to have members migrate? I accept that the authors’ interpretation may be reasonable, but it seems to me that it needs to be made more cautiously.

3. In addition, in interpreting Table 5, the authors’ assert that ‘increased household economic status could potentially improve enrolment rate of NMCS’ (page 13). However, given the focus of the paper it may be more important to state that the impact of migration (the key interest of the paper) is complex (in that a lower level of migration has a positive impact on enrolment but a higher level has a negative impact, for reasons that are well covered in the discussion).

4. The discussion and conclusions are generally reasonable and based on the
data, with the exception of the interpretation issues raised above. In addition some issues related to the specific context need clarifying. The major one is that, in terms of policy options, the authors discuss only the potential option of extending the benefits to migrants under the NCMS, but do not discuss the potential for allowing migrants to join urban schemes. In the conclusion this policy option is suddenly raised with reference to plans to integrate rural and urban schemes in Chengdu, but the reasons for rejecting this option are not very clear. Others have commented elsewhere that the situation of migrants is in fact a challenge to the very foundations of the HI schemes on a divided rural-urban basis. This argument needs to be more seriously considered in the discussion.

5. The limitations of the study are clearly stated, although the implications of these stated limitations (e.g. with regard to assessing causality) are not followed through in interpretation of the data (see the point on the impact of migration on household economic status).

6. The authors do acknowledge some of the work they draw on, but the discussion seemed very light on references to literature either about migrants or about the NCMS. For example there is at least one paper discussing the management of NCMS fund balances alluded to, which is not referenced, there are undoubtedly references on the changing situation of migrants in China and their challenge to national health and social policy, and I suspect that there are some published discussions of the position of migrants in relation to national health insurance policy that would better contextualise the debate on policy options here. There is also no reference to the international literature on health insurance or migration which would help international readers to understand the relevance (or not) of China’s situation to international policy debates.

7. The title could better convey the content of the paper since it does not really explore the impact of migration on the NCMS per se but rather the relationship between migration, household economic status, enrolment and utilisation of the NCMS by migrants.

8. The abstract is reasonable with the exception that it repeats the over-stated assertion that migration had a positive impact on household economic status and also asserts the impact of migration on NCMS enrolment too simply – i.e. that migration promoted participation in the NCMS – when in fact it depended on the level of migration.

Minor essential revisions
1. There are some issues in the background section that need addressing:
   a) The contributions to the financing of NCMS are based on 2006 rates, which are out of date since policy has changed since 2006 (page 4).
   b) The level of compensation to a participating rural resident according to NCMS regulations (page 4) is confusing – does the level of compensation not depend on expenditure?
   c) The references regarding the literature on NCMS in China seem rather thin
and do not represent all aspects considered.

2. Some additional issues related to the specific context need clarifying in the discussion section:
   a) On page 16, the reasons for the sharp decrease in the reimbursement rate for migrants if they seek care in urban hospitals need clarifying – is this due to policy on reimbursement rates at out-of-county hospitals as implied in the example given?
   b) On page 16, the ‘one year balance ratio’ of NMCS funds needs further explanation/clarification as it may not be clear to readers what is meant here.
   c) On page 18, in terms of policy options, the authors discuss only the potential option of extending the benefits to migrants under the NCMS, but do not discuss the potential for allowing migrants to join urban schemes. In the conclusion this policy option is suddenly raised with reference to plans to integrate rural and urban schemes in Chengdu, but the reasons for rejecting this option are not very clear. Others have commented elsewhere that the situation of migrants is in fact a challenge to the very foundations of the HI schemes on a divided rural-urban basis. This argument needs to be more seriously considered in the discussion.

3. The writing is generally acceptable, although in a number of places issues could have been more concisely expressed to enable the reader to better understand the point being made. For example:
   a) on page 6 in the background the levels of remittance by migrants could be more concisely expressed to illuminate the key points
   b) on page 13, section 3.3., the reasons for lower levels of reimbursement could be expressed to make clearer comparisons between the reasons given by migrants and non-migrants.
   c) On page 13, section 3.3, the first sentence needs re-framing to clarify that what is meant is that out of those using in-patient services, 55% of migrants in comparison with 24.6% of non-migrants received no reimbursement from the NCMS.

4. In addition some unusual terminology is used. For example
   a) on page 7, section 2.2, the term ‘home interviews’ is used for what I understand to be a household survey.
   b) On page 7, section 2.2. the selection process refers to ‘towns’, but I assume what is referred to is the entity commonly known in English as ‘townships’.
   c) On page 10, the term ‘household male rate’ is used initially, followed by ‘household gender ratio’ in the subsequent list of definitions. The latter is a clearer form of expression.

5. There are also two very long footnotes on page 9. I am not sure if such long footnotes are acceptable to the journal.

6. The English needs some polishing in places.
**Level of interest:** An article of importance in its field

**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’