Reviewer's report

Title: Advancing the application of systems thinking in health: Managing Rural China Health System Development in Complex and Dynamic Contexts

Version: 1 Date: 24 April 2014

Reviewer: Ligia Paina

Reviewer's report:

Thank you for the opportunity to review this paper, presenting a retrospective analysis of policy processes guiding health system adaptation in China. It is a very interesting paper, providing a unique retrospective on evolution and adaptation and it will be an important contribution to the literature.

In reading the article, the following suggestions came to mind to improve the clarity of the article. In making these changes, the part that could be shortened would be the background and literature review.

Essential revisions

- In the introduction, the flow of the article needs to be improved.
  - The rationale for the paper should be detailed up front – currently, parts of the rationale are found throughout the introduction/background sections (e.g. as late as pg. 5 last paragraph). In paragraph 4 on page 1, the sentences are unclear and would benefit from strengthening;
  - The literature review seems very comprehensive, however, the title of the section seems incomplete, as you discuss more than CAS. Also, the transition from one topic to another within the literature review could be improved. One option for this could be having a few sentences early on about the themes that you find relevance to the study and then introduction of each in sequence, linked to one another.
  - On page 4, the section presenting the China rural health system development as a case study based on CAS – the title implies to me that you will present findings here from your application of CAS concepts. However, I think you intend this as a background section, since methods are presented subsequently. This could be improved by changing the title, introducing this section clearly and outlining the role it plays in your analysis.

- In the methods section
  - The methods section feels incomplete without a paragraph describing the overall case study approach, an analysis paragraph and a discussion of how the multiple and quite different data sources were integrated.

- In the findings section
  - It would be helpful to introduce the findings section with a summary of the transitions that you will subsequently describe.
Because you describe a variety of events over several periods in time, it would be helpful to use a figure – a timeline? – to guide the readers through these. This figure could also be used to highlight when transitions happened.

It is not clear where the data comes from in many of the findings. It would add to the rigor of your study to be more explicit about the sources of the various findings. Also, since you had several interviews, are there any illustrative quotes that could enrich the presentation of the findings?

- Discussion/Conclusion

The discussion is interesting, but it left me wondering about the following questions – which I think will be shared by other readers of the systems thinking supplement

# What did it mean to apply a CAS lens? What was gained from applying the CAS lens vs. not? – same for the other frameworks you mention in the background, so it might be helpful if you could you make linkages to the concepts you describe in the literature review.

# What are re-current themes you found across the transitions you describe and what are the policy implications? What should policy makers pay attention to when introducing the new reforms you briefly describe at the end?

It would add to the rigor of the study if the authors would add a paragraph on the strengths and limitations of the study, bias, pros and cons of the close relationship between authors and the study participants.

Discretionary revisions

- In the abstract, consider switching methods section tense to past tense (discretionary). It would be helpful if the findings and discussion/conclusion paragraphs would be more explicit. What did you find, and what is the set of conclusions that you would like to leave readers with.

- Need to write out CAS since it is the first time introduced and it might be helpful to give a bit more detail about applying a systems thinking/complex adaptive system lens at this point – to lay out the problem statement/rationale for this study. I propose that you don’t use the CAS acronym at all and that you try to minimize the number of other acronyms you use, especially if you will only use them once or twice more after introduction (e.g. TM).

Level of interest: An article of importance in its field

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

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I think the work on this paper might have been partially supported by the Future
Health Systems project (DFID funding). I work for this project, but had no contact or previous discussions with any of the authors about the manuscript topic and I was not involved in the development of the manuscript at all. I don't think this creates conflict of interest, but thought I would declare. Otherwise, I have no competing interests.