Author’s response to reviews

Title: The Trend and Features of Physician Workforce Supply in China: After National Medical Licensing System Reform

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Author's response to reviews:

Dear Professor Mario Roberto Dal Poz,

Thank you very much for the chance to further revise our manuscript. We really appreciate the comments and suggestions from a number of reviewers, which can absolutely help us to improve the manuscript. We hope the revised resubmission will make a modest contribution to advancing the knowledge of human resources for health studies. We have responded the comments and suggestions from reviewing team in details after *** in this response letter.

Best regards,

Chengxiang Tang & Daisheng Tang

Reviewer reports:

Reviewer, #: I sincerely appreciate the great efforts exerted by the two reviewers in trying to improve the manuscript. The topic by itself is important and attempts to explore the hidden facts about the health system in China deserve encouragement. However, this revised manuscript was
so difficult for me to comprehend. Despite the comprehensive revision of the original manuscript, as it stands, content, presentation and language are still unsuitable for publication in the HRHE. A drastic rewriting of the article is needed to aim at using the content of the tables and figures to produce a much shorter and more informative article. The WHO classification of HRH needs to be used.

***Thank you so much for your encouragement and careful reading of our work. You will notice in our revised manuscript that we have listened carefully to your advices and have almost rewritten the Introduction, the Discussion and the Conclusion parts. We are confident the quality of our work has come a long way in making a clearer contribution to the field.

We have sent our work to a professional English Editor for an academic polishing. We hope our revised manuscript reads better and is English grammar proper.

Reviewer, #:2 Dear author,

1) After reading the manuscript carefully, I found that current study provides an interesting look in to newly licensee physicians' supply in a specific period of time but reported results don't significantly add something new to existing knowledge about health human resource management. Furthermore no robust statistical method was used in the study which negatively affected the strength of provided manuscript. In the text there are multiple English writing errors which focus on the need for English editing.

*** Thank you for this meaningful advice on our work.

Our study first charted the physician workforce supply in terms of newly licensed physicians over time since the launch of the medical licensing system in China in 2001. Through the analysis of trend and structure of physicians inflow, the manuscript firstly show the issue of medical education among new physicians and firstly found the feminisation trend of physician
workforce in China. Thus, this paper absolutely adds the new to existing knowledge about human resources for health.

As illustrated in the method section, this study is a descriptive and exploratory study using a unique repository maintained by the National Medical Examination Centre of China to provide complete information of physicians supply trend after licensing reform. Therefore, a reliable source of data that can address the scope and objectives of this study is rather important than a robust statistical method.

We have sent our work to a professional English Editor for an academic polishing. We hope our revised manuscript reads better and is English grammar proper.

2) Introduction section is still vague in highlighting the existing problem which encouraged researchers to work on this field.

*** Thank you very much. We have carefully listened to this suggestion and especially focus on the first paragraph in the Introduction section as below:

‘The health care industry is a labour-intensive sector and thus human resources for health planning is a critical process in developing strategies to meet health care demands [1]. Among the various types of human resources for health, the physician workforce is an essential part [2]. Therefore, monitoring changes of the trend and characteristics of the physician supply deserves more attention by both policymakers and researchers, because the current size of supply flow is critical in setting policies to address a shortage or oversupply of physicians. Specifically, this is rather important in China to examine these changes in physicians because the country has a huge ageing population that implies increasing health care demands need to be met [3]. ’

3) It should be notified whether authors just wanted to report annual number of physicians who were licensed and entered to work market between 2005-2015? Didn't the researchers mention
number of attrition? Didn't the researchers use a modeling approach to forecast future supply of physicians?

*** Thank you. The present study aims to depict the trend and structure of newly licensed physicians after the medical licensing reform in China. Due to a lack of data, this paper focuses only on the pure inflow of new physicians supply, instead of the attrition of stock of physician workforce. We have also modelled and forecasted future supply of physicians in another study with different study purpose.

4) Discussion section needs much work as it doesn't fit in current manner.

Limitations that are mentioned in the manuscript negatively affected its quality. Using simple headcount statistics and reporting the national census data on the field don't seem to add something new to existing literature.

*** Thank you so much. We basically follow your suggestion and rewrite the Discussion section, for which please refer to the revised manuscript.

5) Conclusion section also requires to be revised.

In the study, authors have mentioned that obtained results can suggest future trends in physicians' flow, but in my point of view, this couldn't be totally true as we certainly know that workforce flow is influenced by many factors and policies which dynamically change over time.

*** We really appreciate your comments. In the latest resubmission, we particularly improved the Conclusion section as follows:
This article provides an exploratory analysis of physician inflow into health care market in China using the most recent physician licensing data. The establishment of a medical licensing system is undoubtedly an appropriate approach to control for the quantity of people allowed to enter the physician workforce with a minimum standard of education quality. Our investigation may inform policymakers of human resources for health in at least two aspects: first, policymakers need to pay more attention to the heterogeneity of the medical education of entering physicians; second, the feminisation of the physician supply in China has become increasingly apparent and its impacts on health care provision still require more rigorous examination. This study contributes a useful observation of changes in the physician workforce in China while being helpful in improving future policies on medical occupational regulation in terms of both quantity and educational structure.

Please refer to the third comment for feedbacks to applications of the obtained results in the manuscript and the modelling of future trends in physicians’ inflow.