Author's response to reviews

Title: New evidence on financing equity in China's health care reform - A case study on Gansu province, China

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Author's response to reviews: see over
Dear Editor,

Here within enclosed is a copy of a revised manuscript titled “New evidence on financing equity in China’s health care reform – A case study on Gansu province, China”, which we submit for possible publication in the journal of BMC Health Services Research.

The following is a point-to-point response to editor’s comments and the two reviewers’.

All changes required by editor and reviewers are highlight.

**Responses to Editor**

**Q1. Copyediting:** After reading through your manuscript, we feel that the quality of written English needs to be improved before the manuscript can be considered further.

We advise you to seek the assistance of a fluent English speaking colleague, or to have a professional editing service correct your language. Please ensure that particular attention is paid to the abstract.

**Answer:** Thank you for editor’s suggestion. We have improved the quality of written English of our manuscript, edited by the Edanz that BioMed Central recommends. The abstract of our article has been rewritten with the assistance of Edanz. Editing certificate is also uploaded in “upload file” tab.

**Q2. Structure:** Please check the instructions for authors on the journal website to ensure that your manuscript follows the correct structure for this journal and article type.
Answer: We are sorry for our negligence about our mistakes in structure.

First, we have put the “Health care financing mix” section in the previous version, which should have belonged to background section, into the right place in page 8-12.

Second, we have moved our tables and figures in the articles into the Illustrations and figures and Tables and captions section in page 41 and the following.

Third, we have added the List of abbreviations used in page 34.

Fourth, we have re-uploaded additional material files, the Microsoft Excel of 4 tables in our article, because of the revision of the tables.

Q3: Other changes

1. title: we have corrected some mistakes in the title, and the new title is “New evidence on financing equity in China’s health care reform – A case study on Gansu province, China”. In addition, the title and abstract are also updated in the 'Manuscript details' tab.

2. In the title page, the first author, Mingsheng Chen is “PhD candidate”, not the “PhD”. We are sorry for our negligence and we have corrected the mistake.

3. Authors' information has been moved to title page.

4. We have put symbol “%” in the right place in table 3 in page 48-51.

5. In addition of submission of the revised copy, a clear copy of article has also been submitted. We have accepted all changes in document one by one very carefully. Please check.
Special thanks for editor’s suggestion and recommendation.

Responses to Reviewers

To Reviewer 1

Q1. Make the background more concise, correct some small mistakes (e.g. the initiative of NCMS is 2003, not 2005), and the origin of some data which quoted should be indicated.

Answer: Thank you for the suggestion. (1) We have re-written the background according to the Reviewer’s suggestion. First, we put the “Health care financing mix” part, which should have belonged to background, into the right place in page 8-12. Second, we clarify how taxes were allocated to households and how taxes finance health care system in page 8, line 12-22. Third, we introduce the progress of Basic Medical Insurance (BMI) and add how the BMI’s premium is funded, and we also introduce the new type of BMI, Urban Resident Basic Medical Insurance scheme (URBMI) and its financing contribution to premium in page 9, line 19-22 and page 10, line 13-14. (2) In page 10, line 16, the statement of “The New Rural Cooperative Medical Scheme (NCMS) is a 2005 initiative” is corrected as “2003 initiative”. (3) We have indicated the origin of
some data, for example, data in the sentence of “The average cost of a single hospital admission is more than twice the average annual income of the lowest 20% of the population in China” (page 7, line 9) have been indicated. Data in the sentence of “employers provide 6-8% of employees’ salaries for urban workers under the age of 45 and provide 8-10% of the salaries for those aged 45 or above.” (page 9-10, line 19-22) have been indicated. Data in the sentence of “Second, a new type of BMI, named the Urban Resident Basic Medical Insurance scheme (URBMI), has been carried out for the 420 million urban residents not covered by UWBMI” (page 10, line 9-10) have been indicated. The data in the table 2 has also been noted in the bottom of the table in the page 46-47.

Q2. As the data is from 2002 and 2007, the government financing to health insurance has been growing quickly over the past few years (e.g. the average premium of NCMS is 58.9 Yuan in 2007, but more than 300 Yuan in 2012. the similar with the BMI). So, what this change has influenced the equity should be discussed, and it should be notified in the limitation of the study.

Answer: Thank you for the suggestion. We have added the following discussion to further explain how the financing equity has been influenced by the change of government financing after 2007 in page 30, line 16-22 and page 31, line 1-5. Data limitation is also notified in the limitation of the study in page 32, line 14-17.
Q3. One of the conclusions, “OOP payment still accounts for the highest share of health care financing”, should be carefully at present.

Answer: It is really true as Reviewer suggested it is not proper to say that “OOP payment still accounts for the highest share of health care financing” at present. That we use this sentence is based on the evidence of Proportion of health care financing amount in China’s National Health Account (table 1 in our article). However, we have realized how controversial we use this sentence. Thus, we have corrected the sentence based on data in specific period on basis of in Table 1 in page 33, line 22 and page 34, line 1-2.

Q4. Some sentences need polish. E.g. conjunctions were improper used.

Answer: Thank you for the suggestion. We have completely improved the quality of written English of our manuscript, with the assistance of a native-English speaker with scientific expertise. With the improper conjunctions, we have revised. For example,

in page 19, line 11, “whilst” has been replaced with “while”

in page 23, line 4, “whilst” has been replaced with “while”

in page 25, line 13, “And vice versa” has been replaced with “Conversely”

in page 26, line 2, “which” has been replaced with “where”

in page 27, line 7, “that” has been replaced with “where”

in page 29, line 22, “whilst” has been replaced with “while”
To Reviewer 2

Q1. “In particular, this package incorporates innovation in health care financing, such as; an increase in government health input, the introduction of new types of health insurance (known as Urban Resident Basic Medical Insurance scheme and New Rural Cooperative Medical Scheme), an expansion in health insurance coverage for the uninsured, and thus, a reduction of OOP health payments” The last part of this sentence implies that the reduction of OOP payments is a result of the above mentioned innovations. If this is true you need to put a reference that explored causality between changes in health system financing and the reduction in out of pocket payments in China; and if it is the author’s assumptions they should explain this as expectations rather than causality.

Answer: We are sorry for our negligence. It is our assumptions and we have reorganized these sentences as expectations in page 7, line 21-22 and page 8, line 1.

Q2. It is stated in Page 7 that “other data were mainly tariff for tax and copayment for public health insurance, which were collected from local statistic yearbook”. However, the authors don’t say how taxes and health insurance copayments were allocated to
Answer: Considering the reviewer’s suggestion, we have added how taxes and health insurance copayments were allocated to households in page 8, line 13-22 and page 9, line 19-22, respectively.

Q3. Page13. The recall period for information on out of pocket payments is not stated and it is not clear whether out of pocket payments were both for outpatient and inpatient care. Clarify

Answer: We have clarified what types of health care are included in the out of pocket payments and we have added the information of recall period in it in page 18, line 7-9, according to the reviewer’s suggestion.

Q4. It is not clear what was the measure of living standard in this study. It is stated in Page 7 that gross income was collected in this survey. However, the authors don’t state whether they used total income, adult equivalent or per capita income as a measure of wealth. Did the authors adjusted health care payments for household size and composition? Clarify

Answer: we are very sorry for our negligence of not writing the measure of living standard in the study. (1) We have stated that we take household expenditure as the
measurement of living standard we used in the study in page 18, line 14-18. We also point out the limitation that we use household expenditure as proxy of living standard in page 32, line 10-13. (2) We have explained how we adjusted total income and health care payment for household size and composition through equivalence scale in page 18, line 14-21.

Q5. The study included the analysis of progressivity of general tax among other financing sources. However, the authors don’t explain the type of taxes included. What types of income and consumption taxes were included? Was there limitation of data to allow individual tax sources analysis? Clarify

Answer: According to reviewer’s suggestion, we explain what types of income, substituted by household expenditure, in page 17, line 17-20, and consumption taxes, in page 18, line 2-5, were include in our study. We also point out there was limitation of data to allow individual tax analysis in page 32, line 5-10.

Q6. It seems that public health insurance in Table 3 page 18-19 combines Urban Workers Basic Medical Insurance (UWBMI), Urban Resident Basic Medical Insurance Scheme (URBMI) and The New Rural Cooperative Medical Scheme (NCMS). However, the explanations in pages 9-10 indicates that the benefit package between NCMS and the other two is not the same. Since revenue from these schemes is not pooled together and benefit package is not the same it would be important to check
progressivity within individual insurance schemes. Formal sector schemes might hide inequities existing within informal sector schemes or vice versa, if the analysis is not disaggregated.

Answer: Thank you for reviewer’s useful consideration. Actually, we didn’t combine Urban Workers Basic Medical Insurance (UWBMI), Urban Resident Basic Medical Insurance Scheme (URBMI) and The New Rural Cooperative Medical Scheme (NCMS) together in analysis. We checked the progressivity within individual insurance. Urban Workers Basic Medical insurance (UWBMI) and Urban Resident Basic Medical Insurance Scheme (URBMI) that is pooled implement in urban area for urban worker and residents. The New Rural Cooperative Medical Scheme (NCMS) implements in rural area for rural farmers and residents. We put all of them in the classification of Public Health Insurance for convenience that could display in one single column in the table. However, we confess our confusing way to put the items and thus, we have made a note under the table 3 in page 53.

(Besides, the evidence of UWBMI and URBWI pooled together in urban area can refer, Winnie Chi-Man Yip, William C Hsiao, et al. (2012). Early appraisal of China’s huge and complex health-care reforms. Lancet 2012; 379: 833–42. In Figure: Dispersion of power between ministries and public hospitals in page 835)

Q7: The authors need to present standard errors of the Kakwani indices of the financing sources in table 3 page 18-19 in order to test their significance. These may be
obtained through convenient regression. Refer,


Answer: We are sorry for our negligence and appreciate the reviewer’s very useful reference. The standard errors of Kakwani indices have been presented in the table 3 in page 48-53.

Q8: Table 3 in Page 18-19. I would recommend that you also present the overall Kakwani index. This would help to judge whether there are changes in the overall health financing system after reforms in health insurance. The overall Kakwani index can be obtained by taking the weighted sum of individual financing sources Kakwani indices. The weights can be derived from the proportion of each financing source in total health care financing (Table 1 in page 7)

Answer: Thank you for reviewer’s suggestion. We have presented the overall Kakwani index in table 3 in page 48-53. We also put the explanation of overall Kakwani index in the result section in page 23, line 14-15 and page 24, line 20-22.

Q9. Page 21. “In some developing countries, OOP payment is not a challenge for the high-income group to consume medical goods or services, even higher quality care at
higher price, whereas the low- and middle income groups cannot afford to seek medical service, even basic medical treatment” This sentence requires reference (s)

Answer: Sorry for our negligence. I have put reference into the sentence in page 28, line 14.

Q10. Page 21. “In our study, unfortunately, if we can say that, the OOP payments are progressive in all situations, implying the rich have a stronger ability in health care utilization, whilst the poor does not have enough access to medical services” This sentence is difficult to follow and understand, revisit

Answer: I have rewritten the sentence in page 28, line 17-20.

Q11. Page 20. “… eg., in 2010, value-added tax (VAT), sales tax, and consumption tax account for 52.35%” What is consumption tax in this example? Note that VAT and sales tax are also consumption taxes. Clarify

Answer: Thank you for reviewer’s useful suggestion. The mistake may come from the diverge between China’s tax system and other countries’. We use these taxes and it’s data from China’s National Bureau of Statistics website. However, in order to avoid misunderstanding, we have rewritten and listed each consumption tax in the sentence in page 26, line 10-11.
Q12. Page 20. “...and achieving universal coverage tends to be downward in progressivity” Not clear of the meaning, revisit.

Answer: I have rewritten the sentence in page 27, line 5-7.

Q13. Page 20-21 “However, it is less important reason for that, or the reason explaining the tendency of falling degree of Kakwani index” Not clear, revisit this sentence

Answer: I have rewritten the sentence in page 27, line 11-14.

Q14. Page 25. “OOP payment still accounts for the highest share of health care financing, resulting in a minor role has been played by health sector reform, and consequently a limited health care utilization” This sentence is not clear, revisit

Answer: I have rewritten the sentence in page 33, line 20-22 and page 34, line 1-2.

Q15. It is also important to point out as a limitation that the approach adopted in this study (using kakwani index to explore causality) does not allow an establishment of causality between observed changes in financing progressivity and reforms in health system. One cannot say with certainty that it is the expansion of Urban Workers Basic Medical Insurance (UWBMI) that has led to observed changes in progressivity. Other factors which are difficult to control using the adopted methodology in this article might influence the observed changes in progressivity. Consider this limitation in your
Answer: We appreciate the reviewer’s rigorous thinking. We have added this limitation in our article in page 31, line 18-22 and page 32, line 1-4.

Q16. Page 7 “Equable” replace with Equitable

Answer: We are sorry for our negligence and we have replaced “Equable” with “Equitable” in page 8, line 4.

Q17. Page 8 “…while the budget mainly obtains through a variety of tax revenue”
Revisit this sentence. It sounds like the authors want to say ‘budget is mainly financed through…’

Answer: We have rewritten this sentence in page 8, line 12, according the reviewer’s suggestion.

Q18. Page 2. “Public health insurance presents different financing distribution in urban and rural areas (city: 0.0742 in 2002, 0.0661 in 2007; town: -0.0615 in 2002, -0.1436 in 2007)”
Use urban and rural consistently instead of mixing with city and town
Answer: We have replaced “city” and “town” with “urban” and “rural” in page 4, line 11-13, respectively, according to the reviewer’s suggestion.

Q19. Page 20. “The taxpayers are peasants, most of whom are classified into the group on low-income”
revisit, probably say ‘most of whom are classified into the low-income group’

Answer: We have replaced “the group on low-income” with “the low-income group” in this sentence in page 26, line 17-18, according to the reviewer’s suggestion.

Q20. Page 20. “This improves the poor makes more contribution to public health insurance than they used to be, and consequently the value of Kakwani index is decreased”
Wrong use of ‘improves’, revisit

Answer: Thank you for reviewer’s suggestion. We have replaced the “improves” with “led to” in page 27, line 9.

Q21. Page 22 “One the other hand” replace ‘One’ with ‘On’

Answer: We are sorry for our negligence. We have replaced the “One” with “on” in page 29, line 1.
Q22. Page 24 “Still, we look forward to cross-provinces comparison of financing equity will be conducted in future”
replace ‘will’ with ‘to be’ and remove ‘Still’

**Answer:** We have replaced “will” with “to be” and removed “Still” in page 31, line 16-17, according to the reviewer’s suggestion.

Q23. It would be better to conduct dominance test between health financing concentration curves and income lorenz curve to confirm progressivity of financing sources. In addition, because this study explores changes in progressivity, it would be better to undertake dominance test between concentration curves for 2007 against 2002. The below reference might give you guidance to do this.


**Answer:** We really appreciate the reviewer’s reference provided and the suggestion would enrich our article. We have conducted the dominance test and the result has been presented in table 3 and explained in Result section in page 21 (line 7-20), 23 (line 20-22), 24 (line 1-10), 25 (line 6-9 and line 17-19), respectively. Dominance test is a very useful method to test the change between concentration curves for 2007 against 2002. However, since our study focuses on the financing equity, we cannot present the result
of dominance test in a larger scale because of requirement of word limit in article.

Thank you very much for your suggestion and useful reference you provided.

We thank you for considering this work and look forward to your response.

Sincerely
Mingsheng Chen
11.13.2012