Author’s response to reviews

Title: Improving equity in health care financing in China during the progression towards Universal Health Coverage

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Response to Reviewers’ Comments

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The authors would like to sincerely thank the reviewer for his or her time and effort taken to comment on our manuscript. We have carefully addressed each of the reviewer’s comments, queries and suggestions and we believe that the manuscript has been greatly improved.

Review of BHSR-D-16-01189

This paper tries to explore the progressivity of the finance of health care in China. It uses household survey as well medical records and administrative from the Jiangsu Province data to compute indices of progressivity (KI) in the segmented Chinese healthcare system.

1. I'm afraid I do not understand the research strategy. The UEBMI, URBMI, NRCMS cover different populations. Therefore, they are not sources of finance of the care provided to the entire population.
We agree to the reviewer that UEBMI, URBMI and NRCMS cover different populations in China and there is no universal source of finance of the healthcare services to the entire population. However, the path to achieving Universal Health Coverage (UHC) is different from country to country. China has its unique way of achieving UHC. The evolution of health insurances in China has been described in the Background section (Line 12-22 in Page 5 and Line 1-22 in Page 6). Given the history of health insurance reform and the complexity of administrating health insurances for the Chinese, the health insurance schemes are formed covering different populations: UEBMI for urban residents who are employed, URBMI for urban residents who are not covered by UEBMI (e.g. unemployed, students, old people without pensions, etc.) and NRCMS for rural residents. Therefore, there is no universal health insurance for the entire Chinese population at the moment and hence we analyzed the progressivity of health care financing in each individual health insurance scheme.

Nevertheless, we have further discussed the disparities between different populations and the rationale of conducting this study in the Discussion section (Line 2-7 in Page 17).

“With the goal of achieving UHC by 2020, efforts have been made to expand the coverage of existing health insurance schemes (UEBMI, URBMI, and NRCMS) to a wider Chinese population [30]. By 2012, over 95% of the total population has enrolled one of these three health insurance schemes [14]. Whilst China has made a big progress on the coverage, the equity and affordability of health care is still under investigated.”

2. You can calculate the progressivity of the program by the regulation of the payments: the progressivity of UEBMI is zero, since the contributions are 10% of the income (so why did you get that UEBMI is progressive?). The progressivity of URBMI is the weighted average of the KI for the flat rate and the KI for the general taxation (financing the subsidy of 240 yuan). The progressivity of NRCMS is the KI of the flat rate and the KI of the general taxation financing the subsidy (how the actual level of the subsidy 120-230 yuan is determined?). Only OOP is a global source of finance.

We believe the progressivity of UEBMI is not zero. The readers can find the results of progressivity for each health insurance scheme in Table 3. The progressivity is gauged through Kakwani index (KI), which was introduced in the Methods section. Briefly, KI is calculated by the difference between concentration index (CI) and Gini index and it is used to measure the
degree of equity in the health care financing system. A positive KI indicates progressivity (i.e. the share of health financing contributed by the poor is less than its share of ability to pay), while a negative KI denotes a regressive system (i.e. the share of health financing contributed by the poor is a decreasing proportion of ability to pay). As the CI and Gini index was not equalized in our study, therefore the progressivity of UEBMI cannot be zero. Furthermore, KI of UEBMI and OOP are statistically significantly positive, indicating that theses financing sources are progressive (Table 3).

Table 1 provides a brief introduction of the current health insurance schemes, including the starting year, target population, and financial contribution of UEBMI, URBMI and NRCMS. Of note, we have changed the “financing source” to “financing contribution” in Table 1 in order to avoid misunderstanding. For example, government does not provide subsidy to the workers who enroll in UEBMI. Alternatively, the premium of UEBMI is shared by employers and employees, accounting for 8% and 2% of employee’s salary, respectively.

The level of URBMI subsidy per person was determined by China’s Regional Bureau of Human Resources and Social Security, based on regional socioeconomic development and regional government’s fiscal capacity. Currently, actual level of URBMI subsidy is different in different cities, ranging from 120-230 yuan in 2012.

As the reviewer noticed and what we have introduced in the Background section, financing mechanisms varied and only OOP is a global source of financing across UEBMI, URBMI and NRCMS. Therefore, we have separately calculated KIs for general taxation, URBMI, UEBIM, NRCMS and OOP. Progressivity of health care financing is clearly illustrated with the KIs generated for each category, which indicates how future reforms can be fine-tuned in each of the health insurance scheme.

3. You do not use the data on healthcare expenditure in calculating the progressivity of finance. You can calculate in parallel the inequity in healthcare distribution, adjusting for needs.

In our study, progressivity in health care finance is measured by calculating health care payments, including general taxation, UEBMI, URBMI NRCMS, and OOP payment (Lines 7-21
of Page 10). Therefore, data on health care expenditure is extremely important in evaluating the progressivity of health care finance.

As the reviewer suggested, a separate study can be conducted to evaluate the equity in health care distribution with adjustment for needs. While we embrace the reviewer’s suggestion, however, the major aim of this study is to evaluate equity in health care financing and it is out of scope to gauge equity in health care distribution in this current study.

4. Is Jiangsu Province representative of all the provinces? Why was it chosen?

The major reason to choose Jiangsu Province is because UHC is well achieved in Jiangsu Province: most of the population in Jiangsu has been covered by a public health insurance scheme. This advantage provides us a unique opportunity to evaluate the progressivity of different health insurance schemes. Nevertheless, we admit a single province may not fully represent the country. Therefore, we have discussed the limitation in the manuscript:

“A limitation of our study is that the data were collected from a single province. The results might not represent the case for entire China and might not apply to the equity of health care finance in other provinces.”

5. How total consumption relate to income? This is important for the UEBMI since the contribution is based on income not total consumption.

Household consumption and income are used for different purposes in progressivity analysis: household consumption is an indicator for ability to pay (ATP) while income is used for gauge the premium for UEBMI (Table 1).
As been suggested in the World Bank handbook (Analyzing Health Equity Using Household Survey Data: A Guide to Techniques and Their Implementation), total consumption is a good proxy of ATP than income. Hence, total consumption was used to evaluate ATP, while income was used to gauge the contribution of health care finance of UEBMI as employees need to contribute 2% of their salary to UEBMI.

6. Most of UHC systems are financed by general taxation and earmarked income related taxes. In your case, the general taxation is regressive, because of the difficulty in collecting direct taxes since incomes are not known for the non-working and the citizens in rural areas. Where are you heading in terms of progressivity in the movement toward UHC?

UHC can be achieved in different ways given different country-specific characteristics, through different financing mechanisms. Many countries use general taxation and earmarked income related taxed to finance health insurance, as the reviewer stated. However, there are many other countries with contributory systems, e.g. social health insurance, to finance health insurance. A bottleneck in these countries to achieve UHC is how to expand the coverage to those who are not employed in formal sectors. However, it does not mean it is not possible, for example, it took Germany 127 years to achieve UHC and 58 years of them were spent to cover those people who were unemployed (Carrin, G & James, C. 2005. Social Health Insurance: Key Factors Affecting the Transition towards Universal Coverage. International Social Security Review, 58(1) ). It is also the bottleneck for China to achieve UHC, and China has established URBMI and NRCMS to cover the unemployed in both cities and rural areas. In addition to social health insurance and OOP payment, general taxation is also an important channel of health care finance. Indirect taxes form the majority of general taxation in China. High reliance on indirect taxes leads to a regressive financing pattern because the better-off can transfer the tax burden to the poor. Given equity is a major component in achieving UHC, it is expected general taxation should be progressive in health care finance. Accordingly, we have further discussed in the importance of a progressive general taxation system to UHC in the Discussion section (Line 19-22 in Page 16).

“It is suggested that, in the move towards UHC, not only general tax collection should be increased through a variety of tax sources to fund the pool of UHC, but also general tax structure should be renovated by reduction on indirect taxes to improve financing equity of UHC.”
7. Why progressivity is important? UHC is not a vehicle for income redistribution. A more important question is the solidarity in the system, namely, the cross-subsidization from the rich to the sick.

Progressivity can measure the redistributive effect by health care finance, i.e. the distribution of health care finance according to the ATP. A progressive financing system is regarded as equitable as the payments as a proportion of income are increasing as ATP increases, while regressive form of health care finance is normally regarded as inequitable (Wagstaff A. 2002. Reflections on and alternatives to WHO’s fairness of financial contribution index. Health Economics. 11(2): 103-105). We agree to the reviewer that UHC is not a vehicle for income redistribution, however, the progressivity of health care finance may affect the people’s willingness to participate in health insurance as health insurance is a redistributive scheme. We embrace the reviewer’s suggestion of taking the solidarity of the system in to discussion. A health care system with solidarity ensures the poor have no barrier to health care services when they are sick. Therefore, we believe both progressivity and solidarity are both important to UHC. We have extensively introduced the importance of progressivity to UHC in the manuscript, now we have introduced the solidarity in the Background section (Line 13-22 in Page 7 and Line 1-8 in Page 8).

“The Chinese government’s initiatives have expanded health coverage and they have attempted to encourage progressive payments over regressive payments, with the overall aims of reducing OOP payments and improving the equity of health care financing. Contribution to health care finance has been considered a redistribution of the disposable income of households [15, 16]. Progressive payments refer to the rich contribute a greater proportion of health care payments than the poor in comparison with their ability to pay (ATP). In contrast, regressive payments refer to the poor contribute a greater proportion of health care payments than the rich in comparison with ATP. However, cross-subsidization from the rich to the sick poses a potential challenge to UHC. For example, the individual contributions associated with UEBMI were a fixed proportion of employees’ salaries, whilst the individual contributions associated with URBMI and NRCMS were flat-rate premiums, regardless of each individual’s ATP. Although solidarity with the poor is widely supported in many countries [17], progressivity of health care finance may affect people’s willingness to participate in a health insurance scheme.”