Author’s response to reviews

Title: Trend of disparity between coastland and inland in medical expenditure burden for rural inpatients with malignant tumor in southeast of China from 2007 to 2016

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Reviewer reports:

Lionel Perrier, PhD (Reviewer 2):

The Authors have answered correctly to my comments.

I have two minor remarks:

P2 118 delete ";

P7 113 After adjusting for gender and age should be mentioned already in the Methods section.

Response: We thank the reviewer again for the advice and help. We have improved the corresponding content in the revised manuscript.

Reviewer 2 (Reviewer 3):

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: The revised manuscript addressed most of previous reviewers' comments. In the revised manuscript, the authors further clarified the insurance reimbursement
scheme and added additional analyses using the original expenses as requested. However, the paper remains a descriptive study, which misses the opportunity to explain the disparities in medical expenses across regions in Fujian, China. Moreover, writing can be significantly improved.

REQUESTED REVISIONS:

As the previous reviewer suggests, the underlying factors for the disparity in medical expenditure can be many. In the analyses, the authors only control the individual factors, which is problematic.

First, the distribution of hospitals is uneven between coastline and inland areas. Coast areas can have more, higher-level hospitals, which charge higher fees. Many township hospitals may not be qualified to treat patients with malignant cancers. If the authors dive into the hospital data, they may find some hospitals have zero patients with malignant cancer. At least, the authors need to control the structure of hospitals. Some patients may visit several hospitals for treatment.

Second, the authors need to identify patients with comparable characteristics in coastline and inland regions, e.g. same cancer with similar diagnosis or treatment at same level hospitals. Then we can make some judgment about the expenditure across regions.

Response 1-2: We thank the reviewer for the advice and help. According to the reviewer’s suggestion, we have added the information of tumor site and hospital level in the revised manuscript. The tumor site which was confirmed according to ICD-10 included stomach/duodenum, lung/bronchia, esophagus, and so on. The hospitals were classified into four levels, including township, county, municipal and provincial hospitals. Besides gender and age, tumor site and hospital level were also adjusted in all the multivariate analyses. For more details, please see Methods and Results section, page 5-11, and corresponding Tables and Figure. We have also revised the corresponding discussion and conclusions in the revised manuscript (Page 11-15).

Finally, the authors need to clarify the total expenditure and the out-of-pocket expenditure. The out-of-pocket expense/income ratio can be called burden. Without income data, it is not accurate to call the expenditure burden.

Response 3: We agree with the reviewer on this. The total expenditure was called “hospitalization expenses” in our study which was defined as all the medical expenses incurred during the hospitalization (Method section, page 6, line 9-10).

“Out-of-pocket expenses” was defined as the differences between hospitalization expenses and reimbursement amount (Method section, page 6, line 14-15).
According to the reviewer’s suggestion, we have added the information of “ratio of out-of-pocket expenses to disposable income” which was defined as out-of-pocket expenses divided by disposable income in the revised manuscript. Because the individual income could not be assessed limited by the data source, each patient’s disposable income was per capita annual disposable income of rural residents at county level where the patient lived (Methods section, Page 6, line 12-17). The trend of disparity between coastland and inland in ratio of out-of-pocket expenses to disposable income was described in Result section, page 10, line 1-14 and page 11, line 9-11. And we addressed the instruction of disposable income in the discussion section as one of issues should be considered in the interpretation of the findings (Discussion section, page 15, line 7-9).