Reviewer’s report

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

Version: 0 Date: 03 Sep 2019

Reviewer: Lionel Perrier

Reviewer's report:

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This is a paper addressing an interesting issue, namely disparity in the disease economic burden of malignant tumors between rural patients from coastland versus inland areas. More specifically, the authors investigated whether the New Rural Cooperative Medical Scheme reduced the economic burden of malignancy in both coastland and inland rural patients, and they determined the change in the disparity between patients from coastland and inland areas over time (from 2007 to 2016). It is a well written and scientifically rigorous manuscript. I am of the opinion that the paper addresses a topic that will be of interest to the BMC Cancer audience.

Main comments:

Abstract: P2 l48-50: "the coastland patients and inland low-income patients had heavier disease economic burden than inland patients and coastland low-income patients, respectively". This sentence is hard to follow and relates to the results. The authors should provide more insight regarding the conclusion.

Method:

Data source and study population (P4/5):

The data were extracted from the medical records of patients with NRCMS who were admitted to the medical institution of Fujian province between 1 Jan. 2007 and 31 Dec. 2016. To be eligible for this study, patients had to be diagnosed with a malignant tumor according to the ICD. Of the total of 1,323,291 pts who entered in the study, after exclusion of missing/illogical values, there were 1,306,895 pts in 2,932 medical institutions. What is the supply of care by sector (e.g. public/private) in the coastland and inland areas?
Medical expenses (P5):

To compare the medical expense indicators across time, the indicators were transformed by the Consumer Price Index (CPI) to the price level in 2007. As providing the calculation every year is too lengthy, it would suffice to merely present the general formula.

Statistical analysis (P6):

1/ "After adjusting for gender and age"; 2/ "hospital expenditures have been distinguished according to surgical versus non-surgical"; and 3/ the definition of the low vs. not low-income résidents should be mentioned already in the Methods section.

"A two-sided P&lt;0.005 was established as the level of statistical significance for all tests". Why did the authors specify this as no p-values were reported?

Results

Demographic characteristics

P6 156-58 as well as in Table 1: the punctuation (commas) for the numbers needs to be corrected.

Hospitalization / Surgery expense and reimbursement ratio (P8/9): There are redundancies between the results in the text and the tables. The presentation warrants being improved.

The authors use logarithms due to asymmetric distribution. However, the presentation of expenditure logarithms alone is not very meaningful. Moreover, is the inference on the difference in the logarithms of expenditures applicable to the difference in arithmetic means? These points should be discussed.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

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