Reviewer's report

Title: Cancer burden in China: a Bayesian approach

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This is an interesting paper in which national death survey data and cancer registration data in China were employed to calculate the cancer burden, using a Bayesian approach.

Major points:

The source of errors for rural areas:
According to the information provided in the method of manuscript, it seems that the data of mortality and incidence in rural are not accurate as same as urban; for example in these areas the verbal autopsies were used to ascertain the cause of death. The results for rural also indicated upper MI ratio compare to Urbana’s and the larger uncertainty which would be due to the quality of rural data. Did the authors consider these sources of errors in their Bayesian model to avoid the underestimation?

Misclassification:
It is known that misclassification in death registry and also incidence registry is a source of errors for developing countries. These errors could be one reason of underestimation and variation of burden among the type of cancers. Did the authors consider misclassification in the step of data preparing or analysis?

Comparing criteria:
The authors mentioned that their priority was to improve on previous estimates of cancer incidence in China using the more updated national mortality data and regional cancer registries data with some technical refinements in estimation methods (Bayesian model). Despite their sensitivity analysis, it seems that there is no certain criterion to understand that this technique would be accurately estimates the burden of cancers. Calculating the more cases rather than other methods or registry dose not means the accuracy of model. I believe that at least a simulation study should be conducted to compare Bayesian models to other approaches (example Jensen et al. (1990)’s model).

Generalization of the results:
The methodology of this study could be beneficial for those countries where have not complete and accurate registry system. But for the results of this manuscript (in which the title is Cancer burden in China) I’m still in doubts that the data would represent the total of country. According to the authors, these 32 cancer registries on which the estimated national cancer incidence is based, are
predominately in the more economically developed areas of east China. So the estimation seems more accurate for this part of country, not for all.