Reviewer’s report

Title: A dynamic model and some strategies on how to prevent and control hepatitis C in mainland China

Version: 1 Date: 12 Feb 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?
Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?
No - there are minor issues

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?
No - there are minor issues

Statistics - Is the use of statistics in the manuscript appropriate?
Yes - appropriate statistical analyses have been used in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
No - there are minor issues

OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?
Probably - with minor revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: The authors present a mathematical model of the epidemiology of HCV in mainland China and use it to indicate some preventive measures to stop spreading the disease. The authors used data available from Chinese CDC and estimated most of the parameters of the model using an optimization function (fmincon) from Matlab. It would be more useful if all the information needed to call this function was provided, as for example, the algorithm that is used and how they chose the lower and upper boundaries.
The model reproduces well the data except from some data points that seems to be outliers (Fig 2.) The authors explain that it could be an outbreak but there is no explanation of why the model is not able to capture that outbreak.

In general, the paper is well organized and the objective and conclusions are clear to understand. The methods section would be improved with detailing of the function fmincon as suggested. Regarding results, Figure 2 should be better explained in relation to the modeling and parameter estimation. The authors did not explain their choice for estimating parameters for each year. Why there are different sets of parameters for each year? Table 2 should be better explained in the text. All the choices that the authors made should be clear to the reader.

There are also some suggestions regarding the English language that I would also like to send to the authors to improve their text.

REQUESTED REVISIONS:
The authors should address the choices they made regarding the experiments, better explaining the reasons for fitting parameter per year (Table 2). Moreover, they should also better explain Figure 2 improving the discussion.

ADDITIONAL REQUESTS/SUGGESTIONS:
There are some revisions regarding language that should be addressed before the manuscript can be accepted.

Note: This reviewer report can be downloaded - see attached pdf file.

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

No

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

No

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

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics
Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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