Review of: "An Optimal Control for Ebola Virus Disease with a Convex Incidence Rate: Imputing from the Outbreak in Uganda"

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Potential competing interests: No potential competing interests to declare.

Review report

An Optimal Control for Ebola Virus Disease with a Convex Incidence Rate: Imputing from the Outbreak in Uganda.

Authors: Fulgensia Kamugisha Mbabazi et al.

In this manuscript, the authors presented a mathematical model with a convex incidence rate for an optimal control model of Ebola Virus Disease and analysed the model. An optimal control strategy which aims at reducing the number of infected individuals in the population and increasing the number of recovered through treatment is evaluated. Three control measures: tracing of contacts, lock-down and treatment have been considered. A qualitative analysis and numerical experiments are performed on the model.

In my opinion, the model is interesting and helpful to prevent outbreak of EVD. Though it is interesting I have some concern about the presentation and analysis of the model which is given in the author comments given below. Therefore, the present manuscript can be acceptable if the authors carried out major revision.

Comments to the author:

Abstract part should be a brief description of the presented proposed model and what we want from the model. The findings or results should be given in the conclusion part.

What is the full from of EBV and its difference with the EVD.

Sometime the authors mentioned the model is for EBV and some cases they used EVD model. It should be specified.

The details calculation of R_0 should be given in the Appendix part for better understanding of the readers.

Author should be carried out the sensitivity analysis of R_0.

Stability analysis of Disease Free Equilibrium and endemic Equilibrium must be given for better understanding of the model.

Calculations of the optimal control problem should be more elaborately given for better understanding.

Numerical section should be improved.

Clearly specify (may include a section) motivation of the study.

Language throughout the manuscript should be improved before publication.

If the authors carried out the changes as above mentioned points, in my opinion then the manuscript is in the acceptable form.