

# 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.

This article established a mathematical model of ebola virus disease with convex incidence rate, and studied its optimal control problem, which is of great significance. However, the following points should be improved and interpreted.

1. There are some syntax error and typographical errors, please check.
2. In Chapter 2, it is recommended to explain the transmission pathways of SEITRD combine with Figure 2, which helps to understand the model.
3. Please explain the difference between  $S$  and  $I$  in (2.1) and (2.2).
4. The expression for 'the overall death rate' in the next paragraph of equation (2.3) is incorrect.
5. Error in the last row of matrix  $V$  in section 2.1.2, so, please check if the expression for  $V$  is correct.
6. In the first equation in equation (2.6),  $S$  should be  $S^*$ .
7. Please explain why the equation solutions shown in (2.7) and (2.8) were obtained based on (3.1) and (3.2), rather than (2.6).
8. Please explain the meaning of parameter  $\beta$  in equation (3.1).
9. Suggest that the notation  $N(t)$  for the total population in (3.1) be consistent with  $Q(t)$  in (2.2).
10. Please explain the meanings of parameters  $\alpha$  and  $\gamma$  in (3.3).
11. The solutions to the equation (3.8) shown in (3.9) are missing the negative sign, so, please check (3.10).
12. Suggest explaining the initial conditions used in Chapter 4 (Numerical Simulations), and how the value of  $c_i$  is taken? And, have you considered whether the three measures can achieve the effect set by  $c_i$ ?
13. Please explain the data sources for "Total investment saved" and "Total cost" in Table 2.