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.

In this manuscript, the authors analyzed the transmission process of the Ebola virus based on the SEITRD model. The basic reproduction number is obtained for the model. The disease transmission model was transformed into an optimal control system, and qualitative analysis and numerical experiments were conducted. The work and proposed model are interesting. There are some special comments needed to consider.

1. SEITRD model, the condition H1 that all parameters S,I,T and D are positive is not suitable. Because it is contradictory to H2, where f(0,I,T,D) = f(S,0,T,D) = f(S,I,0,D) =f(S,I,T,0) =0. Moreover, f(S,0,T,D), f(S,I,0,D) and f(S,I,T,0) are not equal to each other in equation (2.1). All parameters considered in this model are positive must be all parameters considered in this model are nonnegative.
2. There are several typos. The following expressions use the Latex text. Such as, a_1 and a_2 should be $a_1=\omega + \mu + \delta _0 , a_2 = \mu + \delta _1 + h$ in equation (2.1). The v_2 of matrix V in equation (2.4) should be 1/($\mu + \delta _1 + h$), etc. p_2 should be $\phi \gamma \omega h $ in equation (2.7). The subscript of sum should be i, and 1/2 is redundant in equation (3.3). The second to fourth equations The derivatives of $b_0 E + b_1 I + b_2$ in the second to fourth equations of (3.7) are neglected. There should be a minus sign before c_1 ,c_2 and c_3 in equation (3.9), therefore the equation (3.10) is inaccurate.
3. In section 2.1.1, I think that D(t is not equal to 0, because natural death is inevitable. The disease-free state needs to be reconsidered.
4. What is the $\\tau$ in equation (3.1)?
5. For most Figures, the difference is tiny. Such as, Figures 5 ,6, 9 ,10, 13 ,14, 17 and 18.
6. The authors claim that “comparing Strategy (III) with Strategy (IV), we … , because the implementation cost is very high compared to Strategy (IV)”, but I found that the cost of strategy (III) is lower than that of strategy (IV).
7. The description of Figure 23 is unclear.