



SDI Review Form 1.6

PART 1:

Journal Name:	<u>British Journal of Mathematics & Computer Science</u>
Manuscript Number:	2013_BJMCS_4682
Title of the Manuscript:	ANALYSIS AND MODELLING OF PREVALENCE OF HEPATITIS B USING DIFFERENTIAL EQUATIONS: A CASE STUDY OF THE TANO NORTH DISTRICT
Type of the Article	Research paper

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment (<i>if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here</i>)
<u>Compulsory</u> REVISION comments	The purpose of this paper is to develop a mathematical model for the spread of Hepatitis B in the Tano North district. It is an important question. Unfortunately, the quality of the modelling and of the writing is poor. The explanations of the model and of the assumptions are insufficient. Some references are missing. The modelling development is unclear (is there a calibration step?). There are some mistakes in the names of parameters; the authors confound parameters which represent transition rates and the size of compartment which represent the number of individuals in each compartment. Simulations provided could be false because the authors considered a low number of individuals in the S compartment, deterministic modelling is used to large number of individuals in each compartment, the estimation of the solutions using simulations (for example using Runge Kutta method) is not convenient when size of compartment are low. The structure of the model is not discussed, another approach with a stratification on the vaccination status would be more adapted, because efficacy of vaccination is not 100% , susceptible and vaccinated individuals could be infected, this is not take into account in the structure proposed. Moreover the redaction do not seem to be a paper but a chapter of a report, description of parameters and notations have to be in a separate table and not in the text. In conclusion, this paper should not be published in this form. The authors have to improve the quality of the redaction and present clearly assumptions, references, explain the choice of the structure...	Addressed.



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<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments	The authors have to keep in mind that they have to facilitate the reading of the paper for reviewers, all calculations in the proofs have not to be detailed (e.g. line 197). The title does not correspond to the work. The modelling is related to the spread of an infectious disease and not of prevalence. It is not “a case study”. Thus, the title has to be changed.	Addressed.