Reviewer's report

Title: Risk factor analysis and spatiotemporal CART model of cryptosporidiosis in Queensland, Australia

Version: 2 Date: 11 July 2010

Reviewer: kun yang

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The study intended to examined the impact of social economic and weather factors on cryptosporidiosis and explored the possibility of developing such a model using social economic and weather data in Queensland, Australia. Overall the objective is clearly addressed. Nevertheless some changes should be necessary before its publication:

1# The data of cryptosporidiosis cases was only collected from the period of 1st January – 31st December 2001, and other impact factors were also collected during the 2001. There maybe have much variation of cryptosporidiosis cases or impact factors during different years or periods, e.g. there are many cryptosporidiosis cases at 2001, however there maybe few cryptosporidiosis cases at 2002. So, the conclusion was not suitable just from the only year data. So, we think it maybe better if the author can use data from more than 5 years.

2# It well known that the transmission of cryptosporidiosis is be very complicated transmitted, the water and other factors might be also very import, why the author only select temperature, rainfall and SEIFA?

3# The page 6, the author want to use a Bayesian random effects model to computer the spatial smoothing Bayes rates smoothing and estimate the underlying distributions of incidence rates of cryptosporidiosis disease. The relationship of underlying risk and the raw risk is the basic and very important for the Bayesian models building, the information provided at this manuscript is not enough, the author should provide more information about this relationship, special the formulae.

4# The author select three spatiotemporal CART models, we think the author should provide more information for the selection. The compare of these three models should be also provided, eg. the value of DIC or AIC. Furthermore, the validation of models using fact data should be also provided.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests