Reviewer's report

Title: Municipal mortality due to thyroid cancer in Spain

Version: 1 Date: 25 September 2006

Reviewer: Pierre Goovaerts

Reviewer's report:

General

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

This manuscript presents the application of an existing method (Bayesian MCMC simulation) to the mapping of the standardized mortality ratios and the probability of exceeding a relative risk of one for Thyroid cancer in Spain. It would be useful to incorporate a short description of the method in layman terms so that the reader understands the basic principles of the smoothing method. MCMC has become very fashionable in the health literature but most practitioners tend to use it as a “black-box”, without due attention to the assumptions underlying this methodology. In particular, two critical components of the application of the Bayesian approach are: 1) the specification of the prior probabilities to start the iterative procedure, and 2) the CPU requirements which often makes the approach unpractical. The authors used non-informative priors, which raises the question of the relevance of a Bayesian approach if no prior information is available. I would like this issue to be discussed in the manuscript. Also, the expression “acceptable computation term” on Page 5 is very vague and both the CPU time and characteristics of the computer used for the computation must be specified in the manuscript.

I also wonder how sensitive the results are to the use of a different type of contiguity criterion.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The English needs to be improved. For example, the expressions "Spain lies near the middle of the table", "Spain gave an undertaking to eradicate", or "in connection wit this last-mentioned aspect" must be modified.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of limited interest

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

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.