Reviewer's report

Title: Information for decision making from imperfect national data: tracking major changes in health care use in Kenya using geostatistics

Version: 1 Date: 7 September 2007

Reviewer: Pierre Goovaerts

Reviewer's report:

General

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

This paper presents an analysis of time-series of mean level of outpatient utilization of health facilities at the national level and for six major provinces in Kenya. Time-series were adjusted and missing values were predicted using space-time geostatistical methods which are not introduced in the present manuscript but are described in attached papers. My comments are mainly methodological:

1. The space-time interpolation method relies on a standard kriging algorithm that does not account for the fact that the data are composed of a numerator and a denominator. This is briefly mentioned in the attached papers but the authors discard the importance of rate instability based on a visual check (note that rate instability could explain the large nugget effect displayed by some spatial variograms). This fact should be re-iterated in the present manuscript to avoid that users overlook the potential impact of rate instability on the variography and subsequent interpolation.

2. The adjusted and unadjusted time series are very similar, in particular for annual means. Therefore, the statement on page 10 that the reconstructed time series reveal some striking features is somewhat misleading. It is also not clear whether the 95% confidence intervals are missing on Figures 1 through 3 or whether they are so narrow that they overlap with the mean estimates.

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

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Discretionary Revisions (which the author can choose to ignore)
**Which journal?**: Appropriate or potentially appropriate for BMC Medicine: an article of importance in its field

**What next?**: Accept for publication in BMC Medicine after minor essential revisions

**Quality of written English**: Acceptable

**Statistical review**: No