Reviewer's report

Title: Definition and characterization of localized meningitis epidemics in Burkina Faso: a longitudinal retrospective study

Version: 1 Date: 21 August 2011

Reviewer: tim peto

Reviewer's report:

Major compulsory revisions.

1. Figure 1 shows the results of the 6 districts. However, a summary of the results of the 201 different health centres should be provided as well together with a description of the relationship between results at the health centre level and the district level. The statistical tests used presented in Table 1 only provides data on health centres within epidemic districts. Similar results should be presented for non-epidemic health districts. The complete table, ideally should provide the number of Health Centres with and without epidemics and relate that the overall district figure. This would highlight the potential ability of health centre data to predict district results.

2. The analysis suggests that spatio-temporal clustering has been found in their data. However, they do not provide robust statistical analysis to justify their conclusions. It is not clear whether the size of the geographical units described (90kmx50km) was derived from their data or pre-determined.

3. The authors conclude that there was great heterogeneity in weekly and AIC among health centres of the same district. The Kruskall Wallis test does not determine true heterogeneity. The population size of each health centre (and number of observed cases) is needed to determine whether the variation of results can be explained by chance alone.

Discretionary revisions:

4. The discussion states that 'localized epidemics concerned suprisingly small population groups. Why were the authors surprised. Is it possible that this is a statistical quirk of the analysis used.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

**Declaration of competing interests:**

I declare that I have no competing interests