Reviewer's report

Title: Space-time clustering of childhood malaria at the household level: a dynamic cohort

Version: Date: 12 September 2006

Reviewer: Mary Ann Lansang

Reviewer's report:

General

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

(1) Page 9, 1st sentence on "re-infection" vs. "persistent infection"--the authors should provide evidence to show that the prevalence of antimalarial drug resistance is not so high in the village as to negate their assertion that positive malarial smears are re-infections rather than persistent infections. This is critical because the authors define "malaria infection incidence" as "new positive thick blood films" (page 9). Page 14, 1st paragraph, seems to suggest the existence of chloroquine resistance. If they cannot show data on drug resistance, it would be safer for them to refer to "prevalence rates" rather than "incidence".

(2) Page 9, last paragraph under "Variables"--what other covariates were used in the analyses in addition to "thatched roofs"? Did they, for example, include no. of or distance from breeding sites (e.g., temporary backwaters)? age group? other variables?

(3) Page 16, 1st paragraph states: "The major risk factors in this village are...", and yet the Methods section only clearly states the inclusion of thatched roofs in the model. No data are shown on the association to age access to treatment, precipitation levels, breeding sites. These results should be presented.

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

(1) Y axes of Figures should be labeled properly. It is not clear what the measure of "incidence" is in these graphs.

(2) Page 7, last sentence and reference under "Study location"--please choose a better citation such as an existing malaria registry, local health statistics, rather than unspecified unpublished data.

(3) Figure 6: please label the "squares" (or dots) properly in the 4 sub-figures--are these households? It would be good to represent households with children who are smear-positive with some other color or symbol in order to better highlight the clusters identified.

Discretionary Revisions (which the author can choose to ignore)

(1) In the Background Section, it would be clearer if the authors could list the main reasons or advantages in doing spatial-temporal cluster analysis. Is it to: "reduce high costs of monitoring?", "improve understanding of the disease and control" (specify how)? or is it to identify risk factors? or to identify populations for vaccine trials? By organizing the reasons, there would be a better flow of arguments in the Background Section.

(2) Suggest add to the title (after the colon): "a dynamic cohort study in a Mali village"--this helps readers doing literature searches to immediately determine the geographic relevance/applicability of the article.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published

Statistical review: Yes

Declaration of competing interests:
I declare that I have no competing interests.