Reviewer's report

Title: Spatial and temporal variation and hotspot detection of kala-azar disease in Vaishali district (Bihar), India

Version: 3 Date: 10 October 2012

Reviewer: Guilherme Loureiro Werneck

Reviewer's report:

I would like to thanks the authors for their answers. Most of my comments were considered in their revision, but some questions remain:

Major Compulsory Revisions

-- When describing the Voronoi statistics (lines 131-132) authors say "However, using this procedure a series of polygons formed around the location of VL affected villages that yield a less heterogeneous thematic layer, usually referred to as smooth." I do not think this is a correct description of smoothing. The Voronoi approach just divide the space in polygons and then the smoothing appears when you apply some rule (spatial weights) to recalculate incidence rates for each area using information from neighbors. Actually, this phrase could be deleted without any loss of information.

-- When detailing the "spatial weights" (lines 135-140), you say "Specifically, spatial weights we used, is based on the inverse geographical distance between the centroids of the kala-azar affected and non-affected villages." Do you really mean just between the centroids of affected and non-affected areas? Wouldn't the smooth procedure apply to any neighboring area independently of being affected or not? Please clarify. If you agree with my observation please change "between the centroids of the kala-azar affected and non-affected villages" by "between the centroids of neighboring villages." The would have to do the same in lines 137-138 and 138-139.

Minor Essential Revisions

- I would suggest just to remove the lines 215-217 (starting on "However..."), this info is not necessary and actually makes thing a bit confusing for the reader.

- Line 258: remove "percentage of".

- Line 324: you say "... but their application to kala-azar has very limited". There are actually many studies on visceral leishmaniasis in Latin America and Africa (and you quote some of them). So maybe you want to say "but their application to kala-azar has been less common, particularly in the Indian subcontinent."

- Table 2: need to check the "0" values for variance, seems not correct.

Level of interest: An article whose findings are important to those with closely
related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, and I have assessed the statistics in my report.