Reviewer’s report

Title: Identifying High- or Low-risk Areas of HIV-, HCV- and Co-infections among Drug Users in a National Methadone Maintenance Treatment Program in Southwest China

Version: 6 Date: 13 December 2013

Reviewer: Rafael T Mikolajczyk

Reviewer’s report:

The authors did not address in the revision the concern I expressed in the initial review and still have. There is an underlying misunderstanding in the interpretation of the analysis: instead of considering HIV, HCV and co-infections as infections the authors approach them as they were non-communicable diseases. This misunderstanding starts with the title: authors speak about high- and low-risk areas for these infections. In fact, what they look at is the regionally high or low prevalence. The observation is that clustering is not surprising for infections – this needs a more detailed discussion – is this just because of different epidemic stage or a different distribution of risk factors.

The interpretation should also consider the direction that apparently there are borders – i.e. some isolation of communities. If these borders agree with township borders than it simply says that apparently there is more mixing within townships between them.

If the issue should be addressed by interventions – then rather spatial clustering of risk behaviors than of prevalence of infections is of interest. The same risk behavior can be associated with a different prevalence, if different stage of epidemics is considered. So in terms of risk analysis, risk behavior and not prevalence should be looked at.

Apart from this general concerns, some minor comments:

1) P. 8, lines 6-15: it is not clear to me, what is the use of the spatial clusters and spatial outliers terminology, this is not considered in the further text
2) P. 10: Rather than reporting categories for p-values (p>0.05, p<0.05) please report the true values.
3) It is not clear why both approaches to spatial analysis are necessary.
4) The sentence “according to the report by Vickermann…” is repeated in its exact wording three times in the discussion. This is clearly redundant.
5) Some sentences are incorrect / incomplete – for example p. 18, line 15, p. 19, line 12.
6) If the main explanation is the difference between Yi and Han ethnic group than it is difficult that it should be reserved to another publication and not presented here.
Concluding – in my view this paper should be substantially rewritten, the analyses which just seem to explore technical possibilities of the methods should be removed (or just reported as sensitivity analyses). Redundancies in discussion should be corrected and the text reviewed by checking if the perspective of infectiousness is always maintained.

**Level of interest:** An article of importance in its field

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

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

**Declaration of competing interests:**

I declare that I have no competing interests.