Reviewer's report

Title: Multilevel analysis of HIV related risk behaviors among heroin users in a low prevalence population

Version: 2 Date: 16 November 2008

Reviewer: Ricky Bluthenthal

Reviewer's report:

Major compulsory revisions

There are still a number of problems with the manuscript has written.

First, it would be helpful to include some of the information requested by the previous review in the current document. For instance, the authors indicate that the by-census in Hong Kong only collects a limited amount of information and thus this paper can only look at median household income, age, and education level. This information should be provided in the manuscript. Similarly, the authors point out that syringes can be purchased in pharmacies in Hong Kong. This should be noted and discussed, along with the wide availability of methadone as an important potential explanation for the very low HIV rate and injection-related HIV risk. Consider citing Van Den Berg et al Addiction 2007 as another important study to find that methadone and syringe access together are very effective at keep HIV risk and infection low.

Second, the authors missed the implication of the Kral et al Lancet and Strathdee et al Archives of Internal Medicine. Both of these incidence studies show that sex risk is more strongly associated with HIV incidence in drug injectors than injection risk. The implication is that the substantial downweighting of sex risk by the authors is not warranted. If they are mostly interested in drug injection in this sample then they might consider abandoning the risk index score and using any drug injection as their outcome variable. They could also combined current and past needle sharing and use that as an outcome as well. The syringe re-use measure does not make sense as an outcome when needle sharing is available to analyze (syringe re-use is a marker of risk, not a risk in and of itself).

And third, as suggested above, far from downweighting sex risk, they might consider developing a model that predicts unprotected sex and multiple sex partners. It is important to note that studies of multilevel risk in injection drug users have found that community factors associated with injection risk are different than those associated with multiple sex partners (see Bluthenthal et al Journal of Urban Health, 2007). In terms of analysis, they could model sex risk as an index or separate outcomes for unprotected sex and multiple sex partners.

Minor essential revision

The conclusion in the abstract does not make sense to me. I don't know why the
authors imply that community characteristics would not be associated with risk behaviors in a low HIV prevalence area.

Page 5 methods, 2nd full paragraph. They can probably delete the first two sentences of this paragraph. They don't really need an explanation for not modeling HIV infection. HIV risk behaviors are a legitimate area of study regardless of underlying HIV infection rates.

Page 9. The age categories reported in the text are different than those reported in Table 1. Also the age categories are different and perhaps overlapping between Table 1 and Table 2. Please clarify.

Page 12, bottom. Because of the downweighting of sex risk, I think it is hard to make a claim that sex risk is seriously examined in the index or in this paper as it is currently constructed.

Page 15, first sentence. Please provide citation supporting the claim of "increasing number of HIV infections among IDUs in Hong Kong" and clarify if the rate is increasing or if people are continuing to become HIV infected through injection risk.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.