Reviewer’s report

Title: The Cedar Project: Rapid increase of HCV infection in a longitudinal study study of young Aboriginal people who use drugs in two Canadian cities

Version: 1 Date: 22 January 2012

Reviewer: Paul Nelson

Reviewer’s report:

This paper reports on the incidence and independent correlates of HCV incidence amongst injecting drug using youths in a prospective cohort study of Canadian Aboriginal people. Elevated prevalence of infection, limited treatment involvement and limited prior data justify the study. Risk behavioural and serological data were sought six-monthly over five years; the 148 youth providing these at least one follow-up interview were included. Incidence of HCV was quite high. Seroconversion closely and inversely related to time since IDU initiation and a Cox PH model found this was by far the strongest correlate; daily cocaine injection and needle-sharing contributed moderately while recent sex work was weakly correlated. The authors argue for urgent injection prevention and harm reduction efforts emphasising females in sex work, safe injection facilities, and culturally sensitive service delivery.

The Cedar project represents a rare and significant research effort. The paper adds valuable evidence about the local epidemiology of a significant public health problem and has international relevance the authors would do well to acknowledge. The article is sufficient in scope and largely well-written but requires greater transparency and rigour in the development and interpretation of the analyses. The design is appropriate for the research question; that it is not able to describe temporal relationships should be made clear. Providing descriptive data, justification for coding decisions, and greater effort to assess confounding would make the work more useful and compelling. This is particularly indicated given the authors’ emphasis on sex work in the discussion, and will assist them to elaborate more accurately and confidently about appropriate harm reduction and prevention efforts.

Major Compulsory Revisions

1. Attribution of sero-conversion to explanatory factors

There is no suggestion of causal relationships here which is good, but it would be prudent to go further and explain that HCV and risk data collected at the same time cannot be used to identify the temporal sequence between these phenomena. ‘predictors’ (e.g. results final para) and ‘likely to become’ (Interp.
Para 2) can too easily suggest a sequence rather than association. You can then address the harm reduction implications of HCV preceding risk behaviour. See Kim et al 2009 BMCPH

2. Elaborate on coding decisions

It would be best to reference or explain why variables were dichotomised and how splits were determined. Re time since initiation, methods para 3 actually argues against splitting (given it can result in imprecision and worse). If coding was data-driven the model should be rerun with this variable in original form (e.g. Spittal 2007 IJCH) or at least opt for greater precision amongst recent initiates, e.g. report rates for <1y. given yours and others' interest here. Essential refs here are Hagan 2008 AJE meta-regression, Royston 2006 Stat Med

3. Address omitted risk factors

A strengths of this work is that your wide consideration of risk factors. However, this makes the omission of others more perplexing. What about non-injecting, poly-drug and alcohol use, and HIV? These do need to be considered in your text, at least. Including in your model would clarify existing relationships (e.g. Willner 2008 JSAT).

4. Reconsider your model-building strategy

Your criterion (bivariate associations p<.05) is highly selective, it might be informative to relax this (p<.2? see Hosmer & Lemeshow) – especially given your sample size. You are also free to force in predictors of interest to you – doing so with gender would allow you to consider confounding with sex work. Likewise location is important, your project can offer unique insight here, why only speculate about this in the discussion? Consider running a location specific model, exploring interactions. Rig sharing and daily cocaine use, given your comments in interpretation para 2? Finally, given the small number of terms in the model, observing the impact of adding and removing terms could clarify these relationships and the relative impacts of given risks (would be useful for aspects of sharing, see Craine et al 2009 Epi Infect).

5. Focus on stated objective and findings, clarify aspects of discussion

I felt the discussion drifted at times. Again re sex work, this constitutes an undue proportion of the discussion given the weak association with seroconversion. It would not trivialise sex workers' welfare to devote greater attention to more persuasive correlates. Interp para 3 also switches between Aboriginal ‘people’ and ‘women’. Be consistent and if focussing on females, why? Further on in interp para 2, writing briefly about such profound issues is a challenge. Can you expand a little here on ‘complex interplay… must be acknowledged”? How can intergenerational trauma be recognised by service providers and what implications does this have for practice- integrating care-givers in treatment? Aboriginal health workers? Any examples of effective application of your suggestions, or if not, perhaps the Cedar project will go some way to providing? Your thoughts will be valuable to workers in similar settings.
Minor Essential Revisions

1. Correct title to reflect content and contribution of paper
   Consistent with what you can demonstrate and amongst whom, your title should read to the effect of “high incidence of HCV infections among young Aboriginal people who use injection drugs”.

2. Clarity re description of sample
   Providing sample n in abstract (e.g. “45/148 participants seroconverted”) helps immensely when reviewing abstracts. Results para 1 describes the sample so I’d rather see this in the methods. Study results proper begin in results para 2.

3. Add brief detail on follow-up outcomes and attrition
   e.g. average number of interviews per participant, time between interviews. Given the time-varying nature of the risk behaviours, shorter intervals would lend greater confidence to their association with seroconversion (and reduce the likelihood that seroconversion itself has precipitated behavioural change/treatment etc). Add sentence on those lost to follow up (did they evince risk factors for seroconversion?)

4. Provide descriptive statistics and p-values
   Provide descriptives for all variables per Teutsch et al 2011 BMCPH. Incidence rates if space. P-values throughout the document, not only CIs.

5. Confirm whether proportional hazard assumption holds for IVs
   Confirming this may matters not only to the interested reader but will improve the article’s chances of being included in subsequent reviews that grade methodological quality. If any IVs breached the assumption (crossed KM lines) then explain that (for example) they were included as strata variables. Might be best to run by statistician.

Discretionary Revisions

Place the research in broader and international context. The paper has an opportunity to connect with literature outside Canada particularly work with young Indigenous samples – these are scarce and this group is often under-represented. egs Van der Poorten 2008 MJA, Maher 2006 Addiction.

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

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