Reviewer's report

Title: Demographic, risk behaviour and social network variables associated with hepatitis C, hepatitis B, and HIV seroprevalence amongst injection drug users in Winnipeg, Canada.

Version: 1 Date: 25 June 2006
Reviewer: Devon Brewer

Reviewer's report:

General

This paper reports a solid cross-sectional study of blood-borne pathogens and correlates of infection in drug injectors, with a noteworthy focus on personal network factors. Perhaps the most interesting observation is the strong association between Talwin/Ritalin use and HCV and HBV infection.

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

None

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

Some of the phrasing in the title and elsewhere in the manuscript seems to mix levels of analysis. Prevalence is a characteristic of an aggregate (a sample or population), but the variables the authors assessed were measured at the individual level. I recommend that the authors fix this by making both sets of terms at the individual level throughout. One possible revised title might be "Demographic, risk behaviour and personal network variables associated with prevalent Hepatitis C, Hepatitis B, and HIV infection in injection drug users in Winnipeg, Canada." Note also that the term "personal network" should replace all mentions of "social network" related to the authors' data, as the data refer to relationships between respondents and their alters, not between respondents (as far as these data apparently can indicate).

The authors are well aware of the limitations to their study. However, one additional, potentially significant limitation needs to be mentioned. The overall elicitation of personal network members (including a wide range of contacts, not just injection partners) was limited to 20 persons. It would be useful to report the summary statistics on the distribution of the number of members elicited overall (mean, median, IQR, SD, minimum, maximum). It seems as all the personal network variables reported in this paper were based on the first 5 personal network members who were injection drug users (IDUs). It is important for readers to know how many (in proportional and absolute terms) of the IDU network members were excluded by this truncation. From the tables, it appears that at least 25% of respondents had injection partners excluded from analysis (i.e., >= 25% had more than 5 IDU network members).

In the last paragraph on p. 8, please specify what "drug-preparation equipment" was asked about. Mention whether the following behaviors were assessed: injecting someone else without receiving anything in return and receiving injections from someone else. Both are as relevant to transmission as other behaviors reported here, and if these weren't assessed it should be acknowledged. Also, I think it's important to report the magnitude of associations (odds ratios) between sharing of other injecting equipment and prevalent infection; this could be done briefly in a sentence.

Were any data on anal sex collected (p. 9)? This type of sex is the most epidemiologically relevant; unspecified measures of sex are very insensitive for investigating the transmission of HCV, HBV, and HIV.

In the results, it is essential to report the correlation between prevalent HCV, HBV, and HIV infection. These analyses are crucial to allow a more complete interpretation of the results.

Minor clarification/grammatical points:
p. 4, lines 3-4: Delete à€œa risk forà€
p. 6, line 4: Insert a comma after à€œlaundromatsà€
p. 6, last complete sentence: Change to something like à€œPrompts included friends, relatives or other individuals to whom they feel close, and people with whom they had used drugs, had sex, resided, or hung out.à€
p. 7 and elsewhere: There is a variable described as à€œIDU initiation ageà€ but in analysis, it seems the variable used was the number of years a respondent has injected drugs. This needs to be clarified.
p. 8, line 1: Change to something like à€œTransgender persons and those reporting an ethnicity other than Caucasian or Aboriginal were excluded from analysis.à€ This might need a further note of explanation or justification.
p. 8, line 2: Delete à€œhaveà€
p. 8, 3rd line of 1st à€œRespondent drug-related behavioursà€ paragraph: Change semicolon to colon.
p. 9, second to last line: Change à€œwasà€ to à€œwereà€ (datum is singular, data are plural)
p. 10, line 2: To be consistent with the text elsewhere, à€œshoot upà€ could be changed to à€œinjectà€
p. 10, line 9: after à€œequipmentà€ insert à€œin the aggregate (across all partners)à€
p. 10, first sentence of à€œDiagnostic testingà€ paragraph: Delete à€œand underwentà€
p. 10, last line: Change à€œseroprevalenceà€ to à€œstatusà€
p. 11: Write out à€œVIFà€ as à€œvariance inflation factorà€
p. 12, 4th line of the first à€œUnivariate analysesà€ paragraph: Change semicolon to colon
p. 13, middle of page: Change semicolon after à€œtalwin/ritalinà€ to a comma
p. 13, last 3 lines: Change to read something like à€œHBV was positively associated with three respondent variables:IDU initiation age, injection with a used syringe, and injection at a shooting galleryà€ and two IDU risk network variables: the number of IDU in the risk network who injected talwin/ritalin and the number who had injected à€¡à€
throughout manuscript: Standardize whether Talwin and Ritalin are capitalized.
p. 16, 2/3 down page: Change sentence to read as à€œRespondentsà€™ injection of talwin/ritalin and their use à€¡à€
p. 18, beginning of second paragraph: Insert à€œAboriginalà€ before à€œethnicityà€

Tables à€” This will likely get fixed during the copyediting process, but the font for the tables is painfully small. It would be helpful to note clearly which category for each independent variable is the reference. Also the p value column should be deleted from all tables à€” it is effectively redundant with the CI column, and diverts attention from the magnitude of and variability around estimates. The CIs should be carefully checked throughout à€” for instance, in Table 1, the CI for cocaine use seems to be inconsistent with the OR observed.

Discretionary Revisions (which the author can choose to ignore)

The authors may want to consider referencing a number of prospective studies of HCV and HIV infection in drug injectors. Although these studies did not involve assessment of personal network factors, I believe that their focus on incident, rather than prevalent, infection probably merits some recognition.
The analyses of the personal network variables involve arbitrary and idiosyncratic categories of the number of IDUs in the network with certain characteristics (e.g., 0/1/2/3-5 vs. 0/1/2-5 vs. 0/1/2-3/4-5, etc.). I suggest the best way to handle such data is to preserve their ratio-scale (continuous) nature, and not categorize them at all. It rarely makes sense to throw away data (and that’s what categorizing continuous data involves). Another alternative would be to pick one arbitrary categorization of these variables and use it consistently for each.

What next?: Accept after minor essential revisions

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

Quality of written English: Acceptable

Statistical review: No

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