Reviewer's report

Title: Incarceration is associated with used syringe lending among active injection drug users with detectable plasma HIV-1 RNA: A longitudinal analysis

Version: 1 Date: 2 August 2013

Reviewer: Josiah D Rich

Reviewer's report:

This is a study of the association between syringe sharing, detectable HIV and incarceration among 657 HIV infected active IDUs who had ever been prescribed antiviral therapy. The authors found significant associations and recommend exploring alternatives to incarceration and rapid implementation of HIV prevention interventions for IDUs within correctional facilities.

I have a few concerns which could be described as "Minor Essential Revisions"

p-6 top, for the 3 hypotheses, in 1, clarify that (I assume) you are talking about VL non-supression after incarceration, in 2, probably should say something like "if hypothesis 1 is found to be true, then, the independent ..."

It might also be helpful to clarify/justify why you are even testing the second hypothesis, as it might not be obvious to all readers.

p-6 you note you check the median of the VL- this is fine if you have one, or more than 2, but what if you only have 2? and a couple of plausible scenarios are a) pt is non-adherent on outside but gets put on antivirals while incarcerated, has undetectable vl documented, gets released, goes back to non-adherence and shows up in community care and has detectable vl documented. Alternatively, an adherent patient gets arrested, does not get meds upon incarceration, has detectable vl drawn, gets released and goes back to taking antivirals follows up in care and has undetectable VL documented. In both hypothetical cases, you only have 2 tests, so not sure which median to use, and furthermore the implications in each case are very different.

This also could be a problem with multiple VL measures in similar scenarios in which case it is clear to determine median, but depending upon where the vl was measured, community or behind bars, the implications would be opposite. Is it possible to look at which vl's were measured in the community vs behind bars?

p-7 the "HIV MD" is this restricted to the community MD? What about the correctional MDs? Is this measure more or less than 6 patients "enrolled" in care ever? Is this measure of experience just limited to new patients enrolled in treatment, or any patient treated for HIV? And does treatment mean prescribed antivirals for the first time, or are patients "enrolled" in the registry each time they are re-started on treatment? Has this measure of "MD experience" been validated?
p-7 Most recent measure of CD4 was used- that could have been years ago in some cases, in which case it is likely meaningless. Perhaps a timeline cut off would be more appropriate- or at least note how many were over a year or 2.

p-10 Seems that the measure of incarceration is self report. That is fine, as I suspect there is little reason to not report incarceration, and for most people it tends to be an event that one would remember, however is there any way to get some sort of corroboration on this? Even on a subset, perhaps even just on jail? What about where the lab tests or medical visits are from? It would be nice to know that these self reports are at least somewhat accurate. Ideally one would have dates and duration of incarceration, and whether the individual was in care before incarceration and whether they got care during incarceration and linked back into care after release from incarceration.

It is probably worth noting somewhere in the discussion that what you are calling “incarceration” can be highly variable, including spending 6 months in the federal system or spending 6 hours in the local jail. This does not change the strength of the associations observed.

**Level of interest:** An exceptional article

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests