Reviewer's report

Title: Characteristics of HIV Seroprevalence of Visitors to Public Health Centers Under the National HIV Surveillance System in Korea: Cross Sectional study

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Reviewer: Sarah Dougan

Reviewer's report:

I thought this was an interesting paper and that the analysis and results would be of interest to BMC Public Health readers and to the field of HIV epidemiology in general.

MAJOR COMPULSORY REVISIONS

I think the discussion section of this paper requires more work.

1. The first part of the discussion does not focus on the major findings of the study as I would have expected, but includes further information on HIV testing practices in Korea which I think should be worked into the outline in the background section. I would like to see the first paragraph being dedicated to the main findings of the study. From the conclusion, this seems to be that voluntary testing identifies more HIV positive individuals than mandatory testing. It would be interesting if there was then further discussion about this point, and comparisons with the literature and surveillance from other countries.

2. There seemed to be a disproportionate amount of emphasis on foreigners with HIV in the discussion section. I appreciate that the rates are higher than in Koreans, but there were only 18 HIV positive foreigners detected with HIV in these PHCs in 2005. This is compared with 131 Koreans. It seems more probable therefore, in absolute terms, that the bulk of HIV transmission in Korea will be among Koreans. It may also be better to present seroprevalence rates by voluntary vs. mandatory testing, as the large number of mandatory tests (presumably in lower risk individuals because those that believe they are HIV+ are anonymously testing) is downwarding biasing the rate of HIV among Koreans vs. foreigners (who I presume are all taking voluntary tests?).

3. There is no mention of gay men / MSM within the paper. Are sexual orientation / behaviour data collected within the PHCs? If so, are a disproportionate number of the men with HIV, MSM? Even if the data are not available then there needs to be some discussion about why the rates are higher among men than women, which would obviously need to include discussion about HIV transmission among MSM in Korea.

4. I think there needs to be more discussion about the study limitations within the discussion section. Particularly around the study population - for example, on page 4 lines 9-11, you mention low-income individuals, but there is not much
further detail on this. There is also no mention of the anonymous testers and the bias that may be caused by their exclusion on the HIV seroprevalence rates within the current paragraph on limitations. I also did not understand what the decrease in the proportion of HIV infections discovered in PHCs would mean for the interpretation of the HIV seroprevalence rates. Why has it decreased? - are there more low risk people testing?

MINOR ESSENTIAL REVISIONS

Page 4, line 21: I think part of the sentence is missing here. "residential identification number (RID) of Korean..."

Page 4, line 23: is the reason that you state that "the RID cannot be deduced from the code" because it ensures patient confidentiality? If so, I think this needs to be explicitly stated. If not, then I think you should mention how patient confidentiality was protected (i.e. you didn't have named data etc.).

Page 5, line 20: it would be helpful if the number of individuals (if possible) could be given here as well as the number of tests.

Page 6, lines 9-10: I think this needs rewording. If I have interpreted this correctly, then finish sentence after "men (1.1 times) (p<0.0001)." and then state that there were statistically significant differences in testing rates between men and women in the HIV ISG and STI risk groups, but not in the general group and HIV TRG group.

Page 6: I would indicate that the ORs that are presented in the results section text are adjusted (e.g. adj OR).

Page 8, lines 20-21: in the UK at least, HIV seroprevalence is higher in older age groups than in younger age groups as you see in Korea.

DISCRETIONARY REVISIONS

Page 3, lines 10-15: I was unsure when reading this part whether the authors were referring to voluntary, mandatory or anonymous testing at times. It would be helpful for readers if there was more clarification here.

Page 5, line 8: by "free" do you mean voluntary or that they were not charged? It would be helpful to state here whether HIV testing was a mixture of voluntary and mandatory testing.

Page 5, lines 11-12: this should be reworded to make it clearer that readers can obtain information on who is assigned to each of the 4 main groups by looking at table 1.

Page 5, line 13: say why individuals testing anonymously were excluded.

Page 6, lines 8-9: (1.3 times) and (1.1 times). To make it easier for readers, change to (mean = 1.3 tests per year) etc.
**Level of interest:** An article of importance in its field

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

**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