Reviewer’s report

Title: Using population attributable risk to choose HIV prevention strategies in gay men

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Reviewer: Beryl A Koblin

Reviewer’s report:

The authors present an analysis of population attributable risk (PAR) and cost related to risk factors for HIV infection in a sample of men who have sex with men (MSM) in Sydney. Their goal is to provide data for evidence-based health promotion. This is an interesting paper and could be useful to better understand the factors driving HIV transmission among MSM in that city.

Major revision:

1. Overall, the manuscript is clear but the Methods section is missing details which would help the reader considerably in assessing the data and analysis. The authors have cited their previous work but more information is needed. For example, how was circumcision status determined? How was HIV incidence calculated? What method was used to do the multivariate analysis of PAR?
2. The analysis of HIV infection costs is based on a number of assumptions for which some are based on data. One of the assumptions, the distribution of CD4 counts among treated and untreated people, does not seem to be based on data. Are there data from registries to support the assumption?
3. The analysis of costs is also based on the PAR. It seems that it assumes only one behavior at a time drives infection. This is unlikely. Also, if one behavior is reduced or eliminated, then other modes of transmission could take its place. In other words, the cost estimates do not seem to take into account the complexity of behavior.
4. The authors have not included other behaviors which have been shown to be independent predictors of HIV infection among MSM, such as substance use (e.g. see Koblin et al, AIDS 2006 which also has a PAR analysis).
5. The STIs included are not ulcerative STIs, such as syphilis or HSV-2, which are associated with an increased risk of HIV infection. It is not clear why these were not included.
6. It is not clear why serostatus of the partner and positioning were analyzed in separate models since positioning is influenced by serostatus of the partner.

No minor or discretionary comments

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