Reviewer's report

Title: Hepatitis B surface antigen (HBsAg) prevalence among Aboriginal and Torres Strait Islander Australians: a systematic review

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Reviewer: Etienne Audureau

Reviewer's report:

This is an interesting paper dealing with the evolution of HBsAg prevalence estimates among Indigenous people in Australia before and after the implementation of universal infant vaccination program. This is an important issue justifying a specific focus because of the high prevalence observed in this population and the potential programmatic challenges that may be encountered regarding screening and vaccination in this group. However, the article suffers from important flaws, including the lack of details regarding the quality / potential biases for each study included, the absence of rationale for not performing meta-analysis techniques including assessment of heterogeneity, and an insufficient discussion regarding the limitations. Overall, it is currently difficult for the reader to have a clear picture of the findings, the extent of bias and the reasonable implications of the study.

- Major Compulsory Revisions

1. Abstract: The first sentence of the conclusion should be more cautiously rephrased (‘…prevalence has decreased’), because of the limits and probable biases and the lack of a proper statistical technique to test the apparent difference observed (see comments below).

2. Background:

2.1 Overall, the general aspects regarding HBV could be shortened; eg. Box 1 seems dispensable to me and might be summarized quickly within the text, eg.2 details on the benefits provided by vaccination.

2.2 Conversely, a clearer focus on Indigenous people should be made to help the reader unfamiliar with the local situation. Specifically, what is the estimated overall population of Aboriginal people in Australia? What are the public health challenges faced by the Indigenous people (risk factors, access to care, ….). Number and geographical distribution of the Territories/States involved [this could be explained within the methods section as well, and use of maps might be helpful for that matter]?

2.3 Also, the importance of doing this review is not sufficiently highlighted: since Indigenous people are already identified as a priority population for vaccination, what is expected from this study? The authors interestingly note that the eligibility criteria for free coverage vary across jurisdictions: what are the potential policy challenges to address?
3. Methods:

3.1 With regard to the study eligibility criteria, the authors do not state any lower temporal bound. As a result, the two periods of interest are very unbalanced (before 2000 [which results in including studies from 1972] vs after 2000). What is the rationale for not using periods such as e.g. (1990-1999) vs (2000-2010)?

3.2 Medians are calculated to provide overall prevalence numbers based on all available prevalence estimates: why did the authors not use techniques such as weighted mean prevalence or meta-regressions, including assessment of the underlying heterogeneity?

3.3 The following sentence is too vague: ‘the authors calculated a p-value’. What were the tests performed?

3.4 Because the universal vaccination program targets infants/adolescents, the comparison of before/after 2000 is questionable for the prevalence estimates in adults / pregnant women / prisoners; at least, issues like delay/latency should be discussed.

4. Results

4.1 The process behind studies selection is not detailed. It is expected (and stated in PRISMA statement) that the authors give the "numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.”

4.2 Again, the description of the different geographic areas is rather unclear to the unfamiliar reader (what are ‘regional areas’?)

4.3 Figures 1 and 2 have no title and - if I am not mistaken - are not referred to in the body of the text.

5. Discussion

5.1 The authors acknowledge a number of limitations, including the risk of overestimation when considering clinical audits. However, there is no comprehensive discussion about important issues such as publication bias, selection bias in the reporting for other study designs (response rates, sampling methods for cross-sectional surveys). Mostly, the conclusions regarding the comparison before-after 2000 should be more cautious, because too many potential biases prevent from ascertaining whether that apparent difference is definitely real or not.

5.2 Overall, it is not clear to me what are the practical implications of the findings, since Indigenous people are apparently already identified as a group at risk justifying recommendations for vaccination (see intro): maybe additional elements could be given with respect to the price/coverage of vaccination and access to care? The authors might detail more why “there remains room for improvement in the coverage of infant and adolescent [...] especially among Indigenous children”.

- Minor Essential Revisions

1. Background: The very last sentence is unclear: ‘We will also present groups in Australia who are a higher risk…’ At this stage, it is unclear whether the authors consider subgroups within Indigenous people, or other groups at risk apart from Indigenous.

2. Methods:

2.1 Please specify the initials of the ‘two authors’ who did the review and information extraction.

2.2 The term ‘Other adults’ to characterize the group not being ‘pregnant women’/prisoners may be inadequate, since it refers to the majority of the community.

3. Box 2: is it referred to somewhere? The current title is not sufficiently informative: recommendations by the authors after considering their findings?

- Discretionary Revisions

- Beginning of the Discussion: the authors state “over a 20 year period”, whereas it is actually an almost 40y period (1972-2008).

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.