Reviewer’s report

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

Version: 2 Date: 14 March 2013

Reviewer: Patrizia Carrieri

Reviewer’s report:

The systematic review by Graham and co-authors has a twofold objective:
A) to estimate the prevalence of Hepatitis B surface antigen (HBsAg) among indigenous Australian compared to non indigenous ones in several subpopulations (adults, adolescents, pregnant women, prisoners)
B) to estimate a possible effect of HBV vaccination strategy on the HBsAg prevalence.

The authors provides different estimates of HBsAg prevalence and a decrease in the prevalence among indigenous populations. The authors also underline that prevalence are still high and further opportunities for HBV vaccination need to be found for the indigenous population. They also put into evidence some missed opportunities in some settings (prison).

The review is well organized, methods for retrieving articles are corrects, tables appropriately structured. The article is easy to read and can be useful for promoting HBV vaccination and international comparisons (ex: with prevalence in endemic areas with or without mass HBV vaccination).

However there are some points that the authors may address to improve the quality and the understanding of the manuscript:

1. It is still not very clear to me whether HBsAg is more prevalent in the indigenous Australian population because it is endemic or because this population accumulate risk factors (or both). This should be better clarified in the introduction to understand which is the contribution of vertical transmission, sexual transmission, drug use, tattoo etc..to HBsAg prevalence. This may be particularly helpful also to understand how much time we may need to observe an effect of the HBV vaccination strategy in this population. Of course if most indigenous infected individuals have been vertically infected, more time may be needed to observe an important reduction in HBsAg prevalence in this population following newborn and indigenous vaccination in the 2000.

2. The discussion is too focused on the indigenous Australian population. Though there is some effort to make comparisons with other populations, the article would benefit from more comparisons with similar populations (or populations in other countries sharing the same pattern of risk factors) or in with estimates in other countries where HBV is endemic. The authors should also try to make some hypotheses, using results from other countries or from modeling.
concerning a possible reduction of HBV-associated liver diseases following the decline in prevalence rates observed (or potentially observable) as effect of HBV vaccination.

3. It is not methodologically correct to use the median of the prevalence of the studies performed before 2000 to obtain an overall indicator of prevalence before the introduction of the HBV vaccination strategy. I think it would be better to build a prevalence indicator as a weighted average of the prevalence of each study (eventually weighted for the inverse of the variance) or use other similar weighted approaches – see also methodology used in meta-analyses.

4) It would be useful, if possible, to focus on the subgroup of adults (as more estimates are available) and try to have a combined estimate per time intervals before and after the change in HBV vaccination strategy (eventually see whether it is possible to statistically prove a significant change.

5) The graphs need some improvements, maybe splitting subgroups (one graph per subgroups) and appropriately reporting prevalence and confidence intervals with clear legends. It is not clear what the bar and the line indicate.

**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