Reviewer's report

Title: Passive smoke exposure and the risk of invasive meningococcal disease in children: systematic review and meta-analysis

Version: 1 Date: 7 June 2012

Reviewer: Robert Booy

Reviewer's report:

In this systematic review the authors have provided a “comprehensive estimate of the magnitude” of the effect of passive smoking on the risk of invasive meningococcal disease. This is an under-researched area and few published systematic reviews have indeed examined it meticulously particularly by exploring the effects of smoking by individual family members, especially of maternal smoking. This paper adds to the literature by filling those gaps and therefore merits publication in the BMC Infect Dis.

However, the paper needs to be revised, as suggested below, before it is accepted.

MAJOR COMPULSORY REVISIONS
1. The search strategy was limited till June 2011 (about 1 year ago), an updated search is needed to identify additional papers.
2. It should be mentioned whether case reports, case series or grey data were included in the review or not.
3. It is clearly mentioned that no language restriction was applied and we see that papers published in languages other than English are included in the review. For example, the following references are published in languages other than English: ref 17 (Turkish), 18 (Spanish), 35 (Dutch), 41 (Chinese) and 55 (Czech). It should be mentioned what strategy was used to abstract data from these papers.
4. Also in the ‘results’ of the abstract odds ratios (ORs) for maternal smoking should be added with 95% CI.
5. The last sentence of the abstract/SUMMARY -“An extra 630 cases of ……in the home”-, needs to be rephrased (eg like this “It is likely that an extra 630 cases of ………. in UK homes”).
6. The sections on ‘INTRODUCTION’ which discusses ‘meningitis’ rather than ‘meningococcal disease’, should be revised.
7. In Table 1, only 12 papers have been listed and the remaining 6 (of total 18) are missing. Also in the same table, ‘Pereiro’ is wrongly cited as reference 45, whereas it should be reference 57. Also, Pereiro was published in 2004, not in 200, and ‘Pereiro’ should be spelled correctly (not Periero).
8. In the ‘DISCUSSION’ section limitations of the study should be listed. Why
meta-analyses was performed despite the presence of high statistical heterogeneity (I² = 56%-81%) should be explained.

MINOR ESSENTIAL REVISIONS
1. Figure legend for Figure 1 is missing.
2. The databases searched should be named in the abstract.
3. Finally, the reference style is not in line with the BMC Infect Dis, and online references should be updated.

In summary, this paper adds to the literature but needs substantial modifications before being accepted.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I have received financial support from pharmaceutical companies CSL, Sanofi, GSK, Novartis, Roche, and Wyeth to conduct research and attend and present at scientific meetings. Any funding received is directed to an NCIRS research account at The Children’s Hospital at Westmead and is not personally accepted by me.