Reviewer's report

Title: Longitudinal analysis of ear infection and hearing impairment: findings from 6-year prospective cohorts of Australian children

Version: 1 Date: 21 November 2012

Reviewer: Inge Axelsson

Reviewer's report:

This study seems to be of good quality but it is wellknown that "garbage in - garbage out": a study can't be better than its data. The study may be useful but limitations must be discussed in more detail.

Major compulsory revisions
p. 6. "(#Does child have any of these ongoing problems... ear infection (yes, no)?": It is about ongoing problems and, as you write, probably mostly chronic otitis media (OM).

In Table 2, about 5 % of 6/7-year-old kids have (chronic?) OM. As far as I know, chronic OM is very common in aboriginal kids but very rare in majority children in Australia (you mention briefly something like that). Does that mean that the aboriginal share of your population is 5 %? Is it meaningful to treat two such different groups of children as one population? (This is question from Scandinavia on the other side of the globe so I don't know if it is a well informed question.) You write “Confounder variables were sex, indigenous status…” (Fig. 5) so you have data to analyze indigenous (=aboriginal?) versus majority populations. Why not try that? Such data would be useful for recommendations for follow-up of OM cases in different populations.

p. 7-8. Here you show data which do not seem to be prevalence but rather incidence. However, the figures look very low: only 9.8 + 2.9 + 0.5 % of the children have had any OM at age 6/7 years. Do I misunderstand the data? Please, clarify.

p. 6. "(#Does child have any of these ongoing problems... hearing problems (yes, no)?": I guess that this includes everything from common, unilateral, temporary serous otitis to rare, bilateral, severe, chronic hearing disability.

In summary, please discuss under Discussion the severe limitations of your study: we know very little about what “ear infection” and “hearing problems” actually mean, but we may assume that the study covers all kinds of ear infections and hearing problems.

p. 7. Correct were/was: Adjusted Odds Ratios...was; hearing problems at age 6/7 year was; hearing problems at age 10/11 year was.

Results: the data in the tables are repeated in the text which I find unnecessary and disturbing.
p. 9. “We acknowledge the possible limitation of the questions and the parent-reported nature of self-reported ear infection by adults”: please, also acknowledge limitation of self-reported hearing problems which probably is worse.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'