Reviewer’s report

Title: Improvement of maternal Aboriginality in NSW birth data

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Reviewer: Steven Guthridge

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BMC Medical Research Methodology
Improvement of maternal Aboriginality in NSW birth data
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Review comments

General
The article addresses maternal Indigenous identification in New South Wales (NSW). This is a relevant subject with significant implications in terms of health financing and service planning. The authors propose an aggregate measure of Indigenous status referred to as the Aboriginal Statistical Variable (ASV) which is a composite of reported Indigenous status in two datasets – midwives data collection and birth registration data. The validity of the ASV is assessed by a comparison with estimates based on capture-recapture of the same datasets using data linkage.

1. The authors’ commentary is restricted to the application of the method in NSW. The approach will have wider interest across Australia and readers would benefit from the authors’ views on the wider applicability (or not) within Australia.

Background
2. It is not clear in either the Background or Methods section, how women identify as Indigenous (or non-Indigenous) in the MDC. It is described by the authors as “self-reported”, but other sources have described hospital admission staff allocating Indigenous status on personal judgement. Refer to publications such as Australian Institute of Health and Welfare 2010. Indigenous identification in hospital separations Data -quality report. Health Services Series no. 35. Cat. no. HSE 85. Canberra: AIHW. This issue has wider relevance, such as in Victoria where the Indigenous identification in less complete.

3. The acronym RBDM is introduced in this section without explanation.

Methods
1st sub-heading
4. As in Background (2) the authors need to reassure the reader that the pivotal assumption of the accuracy of the MDC recorded Indigenous status is valid.
5. The Indigenous status of the RBDM data is less a concern, but again this assumption would benefit from supporting data/reference if available.

6. The assumption of the validity of Indigenous status is only applied to those women who are reported as “Indigenous”. The description needs rephrasing

2nd sub-heading

7. The acronym ASV has been changed in the sub-heading to “SAV”

Discussion

8. The results section includes the application of linked data (Table 2) as well as linked with unlinked data (Table 3). There is a significant discrepancy between the results in each table and I am unclear from the Discussion as to why the authors have included both tables, or what their recommendation is for the application of these two approaches.

9. The substantial discrepancy between the ASV and capture-recapture estimates in Table 3 is only briefly mentioned in the Discussion. This difference, and the discrepancy with the results in Table 2 appears to be one of the most significant results of the analysis and requires fuller explanation in the discussion. One of the conditions for the use of capture recapture methods of two data sources is that the cases (in this case Indigenous women) are true cases. It is likely that in this data there is a level of misclassification of non-Indigenous women, which have the effect of magnifying the estimate. There may also be a lack of independence between the datasets, if a cohort of Indigenous women are more likely to be reported as Indigenous, and conversely some women only occasionally report as Indigenous.

Review summary

The paper makes a useful contribution to the subject of Indigenous identification in New South Wales by introducing a new approach which has substantial merit. The paper needs only minor revisions, including some modest expansion of the Discussion section so that the implications of the study can be more readily recognised and promoted.

**Level of interest:** An article of importance in its field

**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 not competing interests.