**Reviewer’s report**

**Title:** Social determinants of accessibility to birth registration in Lao PDR

**Version:** 0  **Date:** 24 Apr 2017

**Reviewer:** Anne Cockcroft

**Reviewer's report:**

Birth registration is important so studies of factors related to birth registration are potentially useful. This secondary analysis of cross-sectional data collected as part of a more general survey has important limitations.

**Background**

1. The authors use secondary referencing. For example, p5 line 16/17 they cite a UNICEF report, but the data in this report comes from other sources; they should cite the primary source.

2. They cite as a study of birth registration in Nigeria a small study undertaken entirely in one urban community. There is a much larger study undertaken in two states of Nigeria. I am aware of this as an author of the other study. There are other relevant studies that they also fail to cite; some of these are cited in the article from Nigeria:


3. The authors' description of findings from the Lao Social Indicator Survey (LSIS) (page 5, para 3) is seriously misleading. They state that "has birth certificate" was only 16.6%, implying that the remained of the 74.7% "registered" did not have a birth certificate. The figures reported in the LSIS are: 16.6% with a birth certificate seen by the interviewer, 16.1% with a birth certificate not seen by the interviewer, and 42.0% with no birth certificate, making up the total of 74.8% children with a registered birth. Thus, 32.7% of children had a birth certificate, with about half able to find the certificate to show to the interviewer. By restricting their definition of "has a birth certificate" to those children whose mothers could produce the certificate, the authors are effectively saying they do not believe the mothers' reports of their children having a birth certificate. What is their evidence to support this? Unless they can make a strong case for their stance, they should count as "has a birth certificate" all the children reported as having one, even if it was not seen by the interviewer.
4. The authors do not make a convincing case for why they analyse two outcomes: reported registration of the birth, and possession of a birth certificate (even if they were to define this as all children whose mothers report they have a certificate). They say that "a birth certificate issued by the village heard of the community guarantees part of the procedure of birth registration at the district authority". This suggests that children from rural areas without a birth certificate cannot have their birth registered. Yet it is clear from the LSIS findings that more than half of those children whose birth was registered do not have a birth certificate, including in rural areas, so it is clearly possible to have a birth registered without having a birth certificate.

5. The authors state (p6, para 1) that their study "aimed to examine the various social determinants of accessibility to birth registration by contrasting birth registration with birth certification as a basic analysis to improve the birth registration system in the Lao PDR." This is misleading, because in fact they separately examine birth registration and possession of a birth certificate as outcomes. It is not clear what is gained by analysing the two outcomes. Further, their conclusions about what needs to be done to improve birth registration are not based on the results of their analysis.

Methods

6. As mentioned above, I do not agree with the authors' decision to restrict their definition of "having a birth certificate" to those children whose mothers could produce the certificate. There may be many reasons for the certificate not being seen, including haste on the part of the interviewer, that are unrelated to the certification process.

7. On page 7, lines 41-44, the authors state "Statistical tests including the chi-square test were used to test whether there was a significant difference between the responses about birth registration/birth certification and their correlates". It is not clear what this means. It implies that they tested, in some way, the difference between the pattern of associations with birth registration and the pattern of associations with birth certification. But they did not do this, so presumably they did not intend this meaning. They should clarify what they mean.

8. The authors must explain why they felt it necessary to create several separate models for associations with each of the outcomes. What was their justification for doing this? Since they examined factors at different levels, they should use an analysis method that takes this into account, such as GLMM.
Results

9. Related to the multiplicity of models, the description of the results of the analysis is very confusing and unclear. It is difficult to work out which variables they are saying are related to the outcomes, taking other variables into account. The results description does not include any clear comparison of the findings for birth registration and the findings for birth certification.

Discussion

10. In the first sentence (p 11, lines 27-29), the authors say "we investigated a target population to explore possible interventions to improve[ment] access……" I do not agree that they did this. They examined variables related to the outcomes of birth certification and birth registration. That is not the same as exploring possible interventions to do something about the variables related to the outcomes. Finding that place of delivery is a factor associated with the outcome does not indicate what it is about the place of delivery that makes the difference, or suggest what might be needed to address the issues. Some of their suggestions for improvement that they make in the Discussion might be relevant, but they should make clear that they are not based on evidence. Or they should cite evidence from other studies that their proposed interventions might work.

11. The authors note (p13, last paragraph) that a limitation of their study is that it could not examine benefits of birth registration. This is irrelevant; the study was not intended to do this. They fail to note the important limitations of this being a secondary analysis (limited variables available) from a cross-sectional study (cannot draw conclusions about causality and cannot take into account all possible confounders).

Conclusions

12. The authors cannot conclude (p14, lines 12-15) that "….appear to be the most important determinants of birth registration….". This conclusion about causality is not appropriate from a cross-sectional study. They can talk about "associations" but they should avoid terms like "determinants".

13. The conclusions go beyond what can reasonably be concluded from the results presented, and the authors should make clear when they are making their own proposals for interventions.

Are the methods appropriate and well described?

If not, please specify what is required in your comments to the authors.

No
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.
I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.