Reviewer’s report

Title: Aboriginal premature mortality within South Australia 1999-2006: a small area, cross-sectional analysis

Version: 1 Date: 4 February 2011

Reviewer: David Thomas

Reviewer’s report:

Major compulsory revisions

1. Table 4 was omitted and needs to be included
2. Clarify exactly what is used to calculate ISRD in this analysis. If there was more than one option available, why did the authors choose the one chosen? And what are the implications and limitations of this estimate? This is important as in some versions of ISRD, it can include the % of the area population who are Aboriginal.
3. The authors should provide some estimate of accuracy of Aboriginal in SA death records. The whole analysis hinges on this, and the single sentence in the discussion is insufficient.
4. The interpretation in the discussion should be strengthened and better linked to the literature, both around Aboriginal mortality and disadvantage and disadvantage in other international settings. The authors have only tested 2 area-level predictors. Is this enough? What is left out? Are these the most appropriate? There is no discussion of how these two area-level factors might operate to cause increased mortality, and the related literature. Some of the discussion on page 11 is imprecise, mixing up individual and area-level variables – which have different meanings and answer different questions, and would eventually require multi-level modeling to unpack.
5. The conclusion needs to be re-written. It includes imprecise sentences (the second) not justified by the data in the paper, and unsupported statements (the opening phrase of the third).

Minor compulsory revisions

6. Appendix 1 was omitted and needs to be included
7. Include a very brief introduction for international readers about Aboriginal Australians, their health, mortality and why this work is important
8. Authors should clarify whether people who identified as Torres Strait Islander were included or not as Aboriginal.
9. p.5 line 7-8 It is not clear to me why these SLAs were collapsed. Please clarify. The current sentence is unclear. I assume something due to the boundary changes.
10. Why did the authors choose low series population estimates on page 5? What are the implications of this choice? Any sensitivity analyses considered (discretionary)?

11. How many SLAs with nominal population and no ISRD rank were omitted (p.5)? And so how many deaths from these omitted?

12. Doesn’t ABS now use ASGC not ARIA for remoteness? How many SLAs would change remoteness categories if ASGC were used?

13. SA residents are not defined (p.6). Please define. There is no mention of how deaths in other jurisdictions were dealt with, only those overseas. Please describe.

14. Please also describe populations by age.

15. p.7. line 9. The proportions of YLL occurring in … should read The proportions of YLL from deaths at ages 0 to 54…

16. The authors should look for collinearity between remoteness and ISRD as this could cause problems for the model.

17. I am a little concerned about an remoteness squared being in the interaction term but no remoteness squared term (only remoteness) being in the model.

18. p.9 line 2. ‘The rate of early death’ This is imprecise and should be re-written.

19. In the same para, there are not ‘multiple gaps’ but the gap is different in different settings. This paper would suggest predictably so, by remoteness and local area deprivation.

20. The last para on page 9 is not strong. The opening sentence is not true for the observed results – only the modeled lines. If you want to explain where the SLAs are with low observed or modeled outcomes are clustered, this should be in the results not introduced here.

Discretionary revisions

21. ‘Close the Gap’ has a quite complex genealogy involving its political uses in advocacy and by governments and politicians. It encompasses more than just describing mortality gaps. None of this would be apparent to international readers.

22. Results section on Population more logically precedes the section on Premature Mortality. As the different premature mortality in part reflects the different age and remoteness distribution of the two populations.

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'