Reviewer's report

Title: Recent patterns in chronic disease mortality in remote living Indigenous Australians

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Reviewer: John Wakerman

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This is an interesting, well written paper addressing an important topic: changes in mortality rates in Indigenous populations living in rural and remote parts of Australia. The major findings are that (1) adult (>25 years) mortality rates have decreased in the rural & remote areas examined over the period 1998 to 2005 and (2) higher death rates are evident in ‘Remote’ areas relative to both ‘Outer Regional’ and ‘Very Remote’ areas.

The methods appear sound and appropriate, but require review by a statistician.

This is one of a number of recent Australian papers comparing mortality, especially Indigenous death rates, across geographical areas. These have included metropolitan/ remote comparisons (Scrimgeour 2009). They have the potential to provide important contributions to current policy debate in Australia about allocation of resources to Indigenous communities, especially the most remote communities.

There is no doubt that access to services is poorer in non-metropolitan areas (AIHW 2008) and Indigenous health outcomes are very poor for almost all health indicators relative to the whole Australian population, whether people live in cities, rural towns or remote communities. The discussion in this paper canvasses possible reasons underlying the second finding (2) above. This discussion is important in terms of policy implications and, whilst the discussion of limitations is good, the discussion could bear further elaboration.

Firstly, no geographical classificatory system is perfect. They are designed for purpose. For these reasons, there is a plethora of classificatory systems. The ASGC currently used by the Australian Government is based on ARIA. Its limitations are that ‘Outer Regional’ groups a somewhat heterogeneous mix of rural towns. ‘Remote’ refers in the main to larger remote regional centres. ‘Very Remote’ groups both extremely small communities or ‘outstations’ which might be occupied by one or more extended family groups and somewhat larger settlements of 100s to 1000s of people. An analysis of data organised in this fashion must be predicated on a clear understanding of the nature of aggregation.

The unit of analysis and the degree of aggregation are important. For example, Beard JR et al (2008) examine acute coronary events in NSW. Whilst a general increase in incidence from metropolitan to remote areas of NSW was evident,
there was clearly a more complex pattern when analysed by postcode – a much smaller unit of analysis.

‘Remote’ and ‘Very Remote’ residents are a small population, just 3% of the total population. Moreover, there is good evidence relating to the high mobility of remote Indigenous populations (for example, Warchivker et al 2000, Taylor & Bell 2004, Taylor et al 2006). As the authors point out, there is documented and anecdotal evidence that many people move to ‘Remote’ centres when sick in order to better access health services. Criticism of the authors’ earlier paper on mortality patterns in Northern Territory indicated that 26% of deaths classified as ‘Remote’ were previously usual residents of ‘Very Remote’ areas (Zhao et al 2009).

Another speculative reason given for better outcomes in one set of ‘Very Remote’ communities was the provision of appropriate decentralized, mobile health services to a dispersed population which allowed them to live in a dispersed fashion and maintain contact with traditional lands and food sources (Rowley et al 2008).

So, given these various factors, what is the relevance of these findings to policy and practice in the Australian context? The ‘so what’ question. I’m unconvinced that, given high mobility and given the very high death rates overall (relative to the entire population), that a finer delineation of the relative size of death rates across geographical categories of limited utility is particularly useful. What might be useful for policy and practice is how this information might inform the design of appropriate regional health strategies and systems that include both ‘Remote’ and ‘Very Remote’ areas as people move across them. Future research might include the better evaluation of the impact of different service models.

Also of significant interest is how fast the relative improvement in mortality rates is progressing. In relation to ‘closing the gap’ between Indigenous & non-Indigenous mortality, how do the rates of decline over this period compare? Condon et al’s (2004) cited, show higher rates of decline in the 0 to 5 year old group. Are there sufficient numbers in this study to examine declines by different age groupings?

Minor revisions:

1. Abstract: “Despite the well-recognised Indigenous-non-Indigenous health disparity, some reports recent reports suggest…”
2. For an international audience, as well as a brief description of the sort of settlements delimited by each of the geographical categories, terms such as ‘caring for country’ require some elucidation.

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests.