Reviewer's report

Title: Spatial Distribution of Suicide in Queensland, Australia

Version: 1 Date: 5 September 2010

Reviewer: Jessica Pearse

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Comments Depending on whether this will be submitted on-line or not, the Manuscript number, Title and authors' names should be here to clearly identify this review

Major Compulsory Revisions

1. The introduction tends to indicate Queensland suicide data has not been examined using spatial analysis, yet a number of publications not referenced by the authors appear to have already performed some geographic analysis of QLD suicide data. Recommend the authors read the full articles referenced below to confirm they did not use the same techniques applied in this study, and clarify the differences of this study to those conducted previously (e.g. did the previous research not look at clusters or LGA’s or didn’t use relative risk?). Suggest reference to these below publications be made within the introduction as they appear to examine some similar concepts to the reviewed article, and these findings may be used to compare to those of the study (see Cantor, C. H. and Coory, M. (1993), Is there a rural suicide problem?. Australian Journal of Public Health, 17: 382–384; Abstract: Standardised mortality ratios (SMRs) were compared across three zones: urban, provincial and rural, for three age bands: all ages, 15 to 19 years and 20 to 29 years, for each sex. This Queensland study did not find a statistically significant excess of rural youth suicides. Further study of this phenomenon involving other states is called for)

And Cantor, C. H. and Slater, P. J. (1997), A regional profile of suicide in Queensland. Australian and New Zealand Journal of Public Health, 21: 181–186. : Abstract: A regional profile of suicide in Queensland follows on from earlier work which failed to find urban–rural differences in suicide rates. Suicide rates were higher in the north of the state and lower in the more developed south. Rural Queensland health regions displayed both the lowest (Darling Downs and Mackay) and the highest (Peninsula) suicide rates. Socioeconomic factors correlated with these differences in some regions. Suicide rates for Aboriginal and Torres Strait Islanders, especially the young, were high, and may have contributed to elevated suicide rates in northern Queensland, but the numbers were insufficient to account for observed differences.

2. There are two “conclusion” sections provided in the manuscript for review, both which are slightly different. One of these should be removed.

3. The first sentence in the section about “future research and policy
recommendations” (page 13) notes the frequency of suicide in Brisbane and other areas, while the rest of the manuscript has examined rates, relative risk and clustering rather than reporting on frequency; frequency alone does not permit for interpretation of relative rates. If the authors wish to make a point that high frequency areas (regardless of rate) should be targetted for further attention, then this point should be made more clearly. Some of the statements within this section appear to be broader than the conclusions which could be drawn from the research (i.e. There is no real evidence from the study that indicates all indigenous populations have a higher risk of suicide, and therefore the statement that mental healthcare facilities should be strengthened in areas with a high indigenous population (page 13) is probably too broad – maybe make this statement about future research that could be conducted focusing on the areas which the study found had high clustering or high relative risk – are suicide clusters and areas of high relative risk are due to a high prevalence of mental health issues – or perhaps are due to other factors that are not solely due mental health problems in the community (e.g. alcohol abuse, social disadvantage, copy-cat suicides within the communities?). It is also suggested that the final sentence on page 13 is too general to be of any real practical value.

4. The aim should be clearly stated in both the abstract and the text. It should be formatted with more discrete elements that can then be reported against (e.g. Identification of local government areas within Queensland with a high relative risk of suicide by age group and gender; identification of local government areas within Queensland with a clustering of suicide; assess whether clustering only occurs in high risk areas).

5. An additional stated limitation of the study should include the acknowledged difficulty in accurate suicide data collection and reporting (referenced by the ABS in several publications including the Causes of Death, Australia, 2007).

Minor Essential Revisions

1. References to the Figures (maps) within the article do not correspond with the labels at the bottom of the figures (maps). These labels on the maps should correspond to the references within the manuscript and also be titled (as opposed to the separately provided legend for the maps) which causes confusion.

2. There are numerous spelling and grammatical errors throughout the text. Assistance from a senior staff member in one of the author’s departments should be sought to correct these, as the pattern of errors suggests to this reviewer that English is not the first language of the authors.

3. The rationale for a 2003 cut-off for the suicide data should be stated

4. Given the research methods, why may bias be introduced by lack of home address information?

Discretionary Revisions
5. There are interwoven references to Age Standardised Mortality, Relative Risk of Suicide and Clustering within the report. It may be of assistance to the reader if it were more clearly explained how these concepts inter-relate.

6. A shorter, more succinct explanation of the reason behind the aggregation of SLA’s to LGA’s on page 4 would be beneficial to the reader (i.e. Due to the low total incidence frequency of suicides within each SLA, the larger geographic boundary area of LGA’s was used to detect areas of suicide relative risk or clustering.

7. For improved clarity, the steps outlined on page 6 to calculate the ASM could be listed as numbered steps, rather than narrative description.

8. Suggest the results/discussion then be laid out by these specific aim areas e.g. What areas showed high risk of suicide, and for what ages and genders? What areas showed clustering? Did clustering only occur in high risk areas (from the results it appears there were LGA’s with a high relative risk of suicide but which did not show clustering p. 11).

9. It would be of interest to note what concordance version was used to link the SLA’s to the LGA’s – was it for 2001 SLA’s to 2001 LGA’s? (page 5).

10. The table titles could be more descriptive (i.e. Spatial clusters of suicide in Queensland, Total and Males) and Table 1 should have the column heading of “Total” rather than “Both”.

11. Maps with labels which named the LGA’s that are referenced within the article would be helpful.

12. It is suggested that references to previous research which examined indigenous disadvantage be limited only to those which examined Australian indigenous persons rather than including those that looked at indigenous persons in other countries. (references 24-26)

13. Suggest the mention of possible meterological factors (with reference to studies performed in Scandanavia and America) is not really applicable to the Australian environment.

14. Suggest that the authors could note future research could examine possible reasons that Mornington Shire had high clustering, yet neighbouring regions did not – more fully explore any demographic or contextual issues that differentiate these Shires (page 9)

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

**Quality of written English:** Needs some language corrections before being published
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

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