Reviewer's report

Title: Health behaviour modelling for prenatal diagnosis in Australia: A geodemographic framework for health service utilisation and policy development

Version: 2  Date: 27 March 2006

Reviewer: Joan K Morris

Reviewer's report:

General
This is an interesting paper, illustrating the different uptake rates in different geographic areas of Victoria. I feel that the figures do need revising to make the overall message clear and have the following comments - I have put them all under major compulsory revisions as I believe major revision is needed, but do accept that you may not want to make all of them.

Major Compulsory Revision

1. Table 1 / Figures 1 etc. The different geodemographic segments for rural and metropolitan areas are shown along the same axis (Socioeconomic gradient) – are they equivalent. Eg are wheat farmers comparable to new housing estates? Giving the proportions of births in each area on Table 1 would be of interest as I assume the areas vary greatly in size.

2. Figures 1 & 2
a. I am puzzled as to why so many points are highly significantly different from the state average. As a statistician I would like to see the data to check these results. In fact are there 2 state averages for Metropolitan and rural separately? – in which case they should be labelled as such. Though the state average for rural Victoria on Figure 1 looks too high (only two points are above it). It would be useful to have the confidence intervals of the points on the graph as they must be fairly wide?
b. From the graphs it appears that the difference between rural and metropolitan is the important factor – the socioeconomic gradient is not significant. The way the graph is presented causes the reader to focus on the extreme points, which I would think would be due to random fluctuations. And in fact the authors themselves have no explanations for particular outliers (eg Wheat farmers on Figure 2). Again confidence intervals would help here. Alternatively as socioeconomic gradient is not significant perhaps all the areas could be combined and then just four points (with their confidence intervals) could be plotted ie rural & metropolitan vs <37 and above 37 instead of figures 1 & 2. The text could comment that there was no gradient etc.

3. Figures 3 & 4
a. What is of interest here is that there is the expected association between uptake of prenatal diagnostic testing and overall birth prevalence. It would therefore be more interesting to see the graph of Standardised live birth prevalence vs standardised level of uptake for each of the regions. It may be that both Urban and Rural could be plotted on the same figure as the two clusters of points will not overlap.

4. Table 3.
a. Though this table is of some interest I would guess that the majority of differences observed would be explained by the different age structures in the groups being compared and therefore I wonder as to the usefulness of this table.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the
major compulsory revisions

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

**Quality of written English:** Acceptable

**Statistical review:** Yes

**Declaration of competing interests:**

'I declare that I have no competing interests'