Reviewer's report

Title: Using Spatial Analysis to Demonstrate the Heterogeneity of the Cardiovascular Drug-Prescribing Pattern in Taiwan

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Reviewer: Frank Courteney Tanser

Reviewer's report:

This is a potentially useful example of the spatial analysis of a very extensive pharmacoepidemiological dataset of cardiovascular drug prescribing patterns from Taiwan. However, there are more analyses required for the paper to be accepted for publication and these are outlined below.

Major Compulsory Revisions

The authors' jump to the spatial analysis of Moran's I coefficient without summarizing the raw "defined daily dose" (DDD) data using basic descriptive statistics. It is therefore difficult for the reader to work out what defines "low" or "high" for this particular dataset. For example, a simple analysis (comprising a table and associated map) is required to show DDD across the country and a mean (SD) summary of DD by the North/South division (which the authors devote considerable attention to in the paper) with 95% CI.

The limitations of the use of Moran's I should be clearly outlined in the discussion and the authors' need to describe why they chose this LISA method and not another.

Figure 2-6 should be included as a single multi-part figure so that the reader can directly compare the different map outputs. Following on from this, more discussion needs to be devoted to the similarities and differences in the prescribing patterns of the different classes of drugs.

The authors state that the displayed "hot spots" and "cold spots" on the map were "statistically significant" (page 9). However, the authors do not explain how such statistical significance was ascertained. The inclusion of p-values would be helpful here.

Minor Essential Revisions

- Page 13, last sentence - "lurking beneath" sounds a bit ominous. Perhaps "driving" would be better here.
- Page 9, para 1, last sentence - should be "meanings"
- Page 9, para 3, first sentence - "summarized" should be "summarizes"

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, and I have assessed the statistics in my report.

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