Reviewer’s report

Title: Adverse drug reactions due to opioid analgesic use in New South Wales, Australia: a spatial-temporal analysis

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Reviewer: Che Suraya Zin

Reviewer's report:

This is an interesting study examining adverse drug reactions due to opioid analgesic use in New South Wales, Australia: a spatial-temporal analysis. The study provides new information on the space and time variation on the opioid ADR. A number of observations require a little bit explanation to improve the clarity of the manuscript.

Methodology

There will be added value to the manuscript if the type of opioid adverse events and type of opioid drugs are included in this study. Whether the accessed codes refer to general opioid adverse events or to various types of opioid adverse events?

Unclear on the hospital separation. Does that refer to admission or discharge and when were the data recorded?

Unclear on how the author differentiate between acute care and chronic care. Why were the multiple episodes excluded from the study? The counting can be multiple and should not be an issue to the study. Patients with multiple episodes may provide important information on why the ADR keep occurring. The author could stratify how many patients with one episode and how many with >1 episodes

In the method, need to also include the number of postcode areas included and not only mentioned in the results.

Lack of explanation on type of socio-economic status. It might be different from other countries. What does it mean by the most disadvantaged vs. least disadvantaged?

The inclusion of pharmacy as one of the healthcare facilities needs further explanation. Does this refer to only obtaining opioid medication from pharmacy? What about other healthcare facilities such as health clinics or general practitioners. Are they involved in prescribing the opioids that consequently lead to opioid ADR?
Results

A little bit explanation on the total ADR for how many patients. Or this is already refer to the number of patients as one episode for one patient.

Unclear on the majority of clinical conditions were cancer and diabetes. But then the commonly seen in the identified cluster were brain disorder and mental disorder. Explanation is required to improve clarity.

Discussion

The potential shift of opioid adverse events was lack of supported. Other studies mentioned on potential link between health service utilisation and opioid ADR. What was the health service utilization referring to? Was that referring to only pharmacy as included in the current study?

On the unmet healthcare needs in socioeconomic disadvantaged……from places with sufficient healthcare resources. How this conclusion was made?

For cancer, the evidence on the opioid effectiveness is established but the author stated that limited evidence for both cancer and non-cancer. Unclear on the study that the author is referring to line 36, page 12.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

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