Author's response to reviews

Title: Are women with major depression in pregnancy identifiable in population health data?

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Are women with major depression in pregnancy identifiable in population health data?

Reviewer 1:
In your PBS data is the prescribed dose (daily dose/defined daily dose, etc) able to be used? It might be interesting to see whether (if any) patients are on antidepressants for some other indication, such as chronic headaches. While this may be detected in the HDMS 'screening' that the linkage achieves, such information would be of interest in any case.

Unfortunately the data does not contain prescribed dose information at this stage.

Reviewer 2:
Major Compulsory Revisions
1. Expand Introduction to highlight Depression in pregnancy
   
   This has been included. The focus of the article is not depression in pregnancy per se but whether health conditions that may impact on pregnancy outcomes (such as depression) are detectable in administrative datasets using linkage. See Background section of abstract.

2. Simplify Methods section
   
   This has been included

3. Address usage patterns of pharmaceuticals (if women switched agents, or went off meds all together) in methods and discussion section.
   
   This is addressed in the Discussion section with a reference to our work that has been published in a 2011 paper, Colvin L, Slack-Smith L, Stanley FJ, Bower C: Dispensing patterns and pregnancy outcomes for women dispensed selective serotonin reuptake inhibitors in pregnancy. Birth Defects Res A Clin Mol Teratol 2011, 91(3):142-152.

Also, include information on variability in use of pharmaceuticals to treat depression (not all providers prescribe medication)

4. Table 2 categories are not mutually exclusive and should be addressed both in methods and in a table note

   Table 2 has 3 mutually exclusive categories (columns 3-5) and column 2 is the sum of these.

Minor Essential Revisions
1. Clarification on the link to post-marketing surveillance highlighted only in discussion
2. Consideration of grouping medication by class of agent
   
   Not necessary
3. Moving interpretation type comments from results section to methods/discussion where appropriate

Also see attached document for specific details of review:

Overall:
This article highlights depression and pregnancy as determined from analysis of various linked population based administrative datasets. A determination of depression was based on billing claim of pharmaceutical agents used for depression or a billable code as a comorbid diagnosis on either a delivery or other admission to a hospital during pregnancy.

The article has a lot of information, but would suggest that some work needs to go into the focus of the article.

The focus of the article is not depression in pregnancy per se but whether health conditions that may impact on pregnancy outcomes (such as depression) are detectable in administrative datasets using linkage.

“In order for meaningful results to be extrapolated to specific populations, the limitations of the data and linkage methodology need to be investigated and clarified. It is the objective of this study to
investigate the differences in ascertainment which may arise between a hospital admission dataset and a dispensing claims dataset” 2nd and 3rd sentences of Background section of the abstract ...

“No single data source is likely to provide a complete health profile for an individual.” 1st sentence of Conclusion section of the abstract.

For example, the article may need to be reframed to focus more in the introduction on the known literature related to depression and pregnancy, particularly as related to prescribing patterns due to potential toxicity to the fetus as highlighted in the discussion. Generally, the article needs work to improve the overall clarity, presentation of the data, and discussion of the findings.

Abstract:
Overall, the abstract is well written, but it may need to be clarified a bit more. For example, the background section highlights the importance of data set linkage and only emphasizes that major depression in pregnancy is used as an “example.” The authors should consider adding in some language related to the topic of depression and the impact it and its treatment may have on a pregnancy.

This has been included

Introduction:
This section provides some background information on the importance of data linkage activities and some general information related to mental health and depression. There is a brief mention of the prevalence of antental and postnatal depression in Australia, but no mention about the potential dangers or risks of depression and its’ treatment and why it could be important to analyze. It ends by stating objective for the study to “investigate the differences in ascertainment between two datasets, using major depression in pregnancy as an example.” Suggest the authors should expand the discussion to reflect upon possible impact of depression during pregnancy and further framing why this would be important to study.

This has been included

Methods:
This section describes in some detail the various datasets used and some basic definitions are introduced including the issues with the PBS, the ADEC classification of pregnancies, the SEIFA, the WADLS, and describes the methodology and definitions used in the study. The authors should consider simplifying some of this text and expand more on the actual statistical methods used in the study.

The ‘statistical methods’ are only percentages in Tables 1-3. The Methods section now includes a more detailed description of the statistics in Table 4: “Comparisons of demographic, pregnancy, labour and delivery characteristics using MNS data were also made between the women identified with depression using the PBS (any PBS cases) and the remaining women identified with depression using the hospital admissions (HMDS only cases). Odds ratios with 95% confidence intervals (OR; 95% CI) were calculated for all comparisons of prevalence. Student’s t-tests were used to compare the means of continuous measures such as maternal age and gestation.”

Simplifying would allow more space for a more complete description of the data and findings presented in the results section.

Results:
There’s quite a bit of commentary about factors that may explain the differences in the result section, but this type of interpretation is generally found in the discussion section of the paper and not as part of the results.

Interesting findings presented by particular medication, but the authors may want to consider grouping by class of agent as well. There will also need to be some additional clarification in the methods on how the authors handle those that may have been treated with more than one agent in the study period? By showing such specific detail, the authors highlight the strong possibility of using these type of data linkages for post-marketing surveillance related to adverse birth outcomes, but very little is discussed about this in the paper.

The focus of the article is not depression in pregnancy per se but whether health conditions that may impact on pregnancy outcomes (such as depression) are detectable in administrative datasets using linkage.
Discussion:
This section is meant to frame the context of the findings particularly as it relates to the objectives for the article, and highlight the implications. The current discussion section highlights information suggesting the dangers/importance of Depression and Pregnancy. Think that some of this information could be included in the introduction section to help frame reasons for the study. Concerned about the lack of information about the variability in depression and its treatment requirement. For example, it would be helpful to know what proportion of depression is treated cognitively without use of pharmaceutical agents and addressed as a limitation.

We cannot determine this from our data
Additionally, it would be interesting to know about usage patterns related to pregnancy (ie...did people stop using as a result of getting pregnant or switch to a different agent, etc...)

This is addressed in the Discussion section with a reference to our work that has been published in a 2011 paper, Colvin L, Slack-Smith L, Stanley FJ, Bower C: Dispensing patterns and pregnancy outcomes for women dispensed selective serotonin reuptake inhibitors in pregnancy. Birth Defects Res A Clin Mol Teratol 2011, 91(3):142-152.

Tables:
Table 1: Interesting, but wonder if specific type is needed unless the authors want to highlight more on the potential for post-marketing surveillance. Also may want to consider presenting in terms of classes of agents.

Table 2: Consider adding a table note as it would appear that the morbidities listed are not mutually exclusive so that an individual could appear more than once.

This has been included