Reviewer's report

Title: Inadequate prenatal care and its association with adverse pregnancy outcomes: A comparison of indices

Version: 4 Date: 28 November 2007

Reviewer: Nancy Hessol

Reviewer's report:

General

The author(s) did a nice job responding to the reviewer’s comments. However a few issues remain, as noted below under major and minor comments.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Previous Major comments:

1. Page 5, first objective: what is the rationale for the trend analysis? Was there some significant public policy change that warrants this investigation? I think this specific aim is superfluous to the main focus of the paper and should be removed.

   This first objective still stands out as being of lesser importance than the other 3 objectives. If the authors’ feel strongly that this should be part of this paper then they should: 1) give sufficient rationale for this investigation in the introduction section; 2) comment on the findings in the discussion section; and 3) conclude why this was of value. Also please see my response to previous minor comment # 6 below. If the number of singleton live births has declines so precipitously over the ten-year period, might this have affected the adequacy rates of pre-natal care and adverse prenatal outcomes over time?

2. Page 7, section 1: The Kessner index is old and hardly used anymore. I recommend eliminating this index from the comparative analyses.

   This has been adequately addressed.

3. Pages 7-9, methods section: For indices 3 and 4, you need to detail how women with missing data on PNV visit are categorized. In addition, the authors need to specify if they excluded or how they categorized women with missing indices in their analyses.

   This has been adequately addressed.

4. Page 9, second paragraph: the analysis of agreement between the various indices adds little to the paper and should be removed from both the methods
and results.

This has been adequately addressed.

5. Page 9, third paragraph, sentence on logistic regression: Your outcome is inadequate PNC but what is your reference group? On page 10 in the results section you say that you combined the inadequate care group with the no care group. Did you also combine the intensive, adequate, and intermediate groups together as a reference group? Either way, please specify. If you collapsed the intensive and intermediate group with the adequate group as the referent, this may be problematic as you are likely to dilute the unique characteristics of each of these indices. I would strongly recommend you only use the adequate group as the referent.

Thank you for the additional details. I still have concerns about lumping the intensive prenatal care group with the intermediate and adequate groups. Can the authors run the statistical models excluding the intensive group and see how those results compare with the models that include the intensive group. Perhaps they can then summarize that information in the result and comment upon it in the discussion section.

6. Results section: in the United States, race and ethnicity are strongly associated with pregnancy outcomes and utilization of prenatal care. There is no mention of race or ethnicity of this study population nor is any adjustment made for this factor in the analysis. Please explain why.

This has been adequately addressed.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Previous Minor comments:

1. The pages are not numbered. I numbered my copy of the document starting with page 1 as the title page. My comments are base on this numbering scheme.

This has been adequately addressed.

2. Page 3, Abstract, last sentence: the term “gestational age bias” is too vague and should be defined.

This has been adequately addressed.

3. Page 6, second sentence: what was the population during the ten years of the study (1991-2000). Why give the statistic for 2001?

This has been adequately addressed.

4. Page 14, second paragraph, first sentence: Avoid absolutes and replace the word “all” with “most”.

This has been adequately addressed.
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5. Figure 1: as mentioned under major comments, this trend analysis adds little to the paper and should be removed.

This has been adequately addressed.

6. Table 1: please add the total sample size for each year. Also, please show the percent with missing indices.

This change had been made but the authors should offer an explanation as to why the absolute numbers have declined by over 22% in this ten-year period of study.

7. Table 2: as mentioned under major comments, the analysis of agreement between the various indices adds little to the paper and should also be removed.

This has been adequately addressed.

8. Table 5a-c: Please specify the reference groups for all the covariates (the PNC indices, maternal age, and parity). Were maternal age and parity kept as continuous or categorical covariates? If categorical, what was the reference group?

This has been adequately addressed.

9. References: Several of the reference should be proofread. The last lines of references 1-3 have errors (Ref Type, Author). Also reference 4, JAMA should be all capital letters.

This has not been done but can be handled by the journal text editors.

10. My version of the document had a duplicate figure 1.

This has been adequately addressed.

New Minor comments:

1. Page 3, abstract, conclusion, 2nd sentence. Change the word “cannot” and replace with “should not”.

2. Page 5, paragraph 2, 3rd sentence. State the time period for the British Columbia study (what years?).

3. Page 8, paragraph 2, 2nd sentence. You say that the GINDEX has 6 categories yet you only list 5 (no care, inadequate, intermediate, adequate, and intensive). Please correct.

4. Page 10, 1st sentence. Please double-check the M-H trend test statistic for the R-GINDEX.

5. Page 10, paragraph 2, 2nd sentence. I believe the authors may have neglected to revise these results. The range for the first set of numbers should be
21.1% to 21.6% and for the second set of numbers 24.3% to 26.4%.

Discretionary Revisions (which the author can choose to ignore)

**What next?**: Accept after minor essential revisions

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

**Quality of written English**: Acceptable

**Statistical review**: No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests**:

I declare that I have no competing interests.