Reviewer’s report

Title: Associations of maternal prepregnancy obesity and excess pregnancy weight gains with adverse pregnancy outcomes and length of hospital stay

Version: 1 Date: 12 May 2011

Reviewer: Marian Knight

Reviewer’s report:

This is a well written paper which seeks to investigate a range of pregnancy outcomes in relation to pre-pregnancy obesity and gestational weight gain, using data on a cohort of 6,500 women delivering in Brisbane, Australia in the early 1980s. The data are not unique; as the authors indicate, a number of similar studies are already published, including one of a more recent cohort from the same hospital. I suggest a few important changes to further improve the manuscript.

Major compulsory revisions

1. One of my major worries is about the generalizability of this study of women delivering almost 30 years ago to outcomes of women giving birth now. The authors acknowledge this as a study limitation, but I feel do not fully discuss differences between their cohort and women delivering today, for example the increased prevalence and degree of obesity, higher proportion of women delivering by caesarean section now.

2. The authors use the IOM categories throughout, but make no discussion of the derivation of these categories and the criteria used by the IOM to define weight gain as excessive.

3. I would like to see a clear power analysis in the methods section; I am concerned that some of the differences that the authors report in their results compared with previous studies may be due to limited study power.

4. Can the authors discuss the clinical and public health significance of an average increased length of stay of 0.09 days?

5. The first line of the discussion lists a greater risk of pregnancy complications, caesarean delivery and length of stay as significant. However, they demonstrate that after adjustment for the former two factors, length of stay is no longer significant, and I feel this should be clarified in this sentence.

Minor essential revisions

1. The background section of the abstract is actually the study aims and should be renamed.

2. Some correction of the English is required, for example the first paragraph on page 13.

3. Page 16 consists of one very long paragraph, It would be helpful to break this up.
4. Discussion page 16. Might placenta praevia, accreta and previous caesarean delivery be other complications which might result in increased length of stay which teh authors did not consider?

5. Web-table 2 lists classical caesarean section as the mode of delivery for more than 10% of women. Should this read lower segment caesarean section?

6. Web-table 3. Is length of stay normally distributed? Are medians and ranges or IQR more appropriate?

7. Tables 1 and 2 are made unnecessarily complex by the presentation of data on more than one model. Can the authors limit to the fully adjusted model?

8. Page 18 line 8 should read “The relationship between prepregnancy obesity and increased length of hospital stay was fully mediated..”

**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