Reviewer's report

Title: Maternal occupational exposure to polychlorinated biphenyls and the secondary sex ratio

Version: 1 Date: 7 November 2010

Reviewer: Henry Anderson

Reviewer's report:

major revisions

1. There needs to be a more detailed description of the job-exposure-matrix and how exposures were estimated. Although this is provided in other publications, it is critical to the analysis and thus needs further description in this manuscript. It is very difficult to understand/interpret what the figures in the cumulative exposure mean. This is very different from PPM years and the readers need to be provided a better grounding in the methodology? This appears to be a mix of qualitative and quantitative measures. It appears quite sophisticated, but the details are lacking.

2. It would be useful to discuss the different routes of exposure in the "matrix". How much of the exposure was from skin contact and how much inhalation? Skin contact might result in a different mix of congeners being absorbed. Are there differences between the groups or plants? Certainly there would be differences by job categories. Mention is made that the air measurements predicted the blood PCB levels, but no data is presented indicating that this holds for this short employment/young segment of the larger occupational cohorts. Were these women at "equilibrium" or were there levels still accumulating?

3. The median duration of employment before conception was around 2 years. And most were under the age of 25 so the exposures are not exactly chronic compared to the other workers in this plant or the duration of employment distribution in the mortality studies.

4. Although there is discussion of the body burdens seen in these cohorts, it is unclear what the body burdens would have been for these young women with few years in the plant and how different the exposed were from the controls. It would be helpful describe the data available on this segment of the cohort so early in their employment years and at young ages.

minor essential revisions

5. A bar graph showing the length of employment and number of births in both the "controls" and the exposed group would be informative.

6. Both groups have lower numbers of males than the general population. This indicates a caution and that births may have been missed.
7. Given the number of women, what would have been the expected number of first pregnancies (first births)? The numbers seem low for the time, but some mention should be made.

**Level of interest:** An article of outstanding merit and interest in its field

**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.