

Reviewer's report

Title: The association between low level exposures to ambient air pollution and term low birth weight: a retrospective cohort study

Version: 1 **Date:** 6 September 2005

Reviewer: Ann Aschengrau

Reviewer's report:

General

This report deals with an interesting research question about the impact of pollution on the risk of low birth weight. While the study is well-done, the manuscript would benefit from additional analyses and a more thorough discussion of the study limitations, particularly exposure misclassification

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

1. The authors should also conduct and present analyses that treat birth weight as a continuous variable (e.g. present mean birth weights and mean birth weight differences according to the exposure category). In this way, readers will be able to better understand the nature of the impact of pollutants on birth weight.
2. The authors should also conduct and present a summary of non-parametric (e.g. spline) analyses to determine the actual shape of the pollutant-birth weight relationship. For example, it appears that there is a threshold effect for first trimester sulphur dioxide exposure above the 50th percentile, but this could be a function of the cut point selection.
3. The authors should state whether or not there were multiple births for a particular woman during the observational period and should take "clustering" into account, if needed, in the analysis.
4. The discussion of exposure misclassification should acknowledge that a dispersion model was not used, that meteorological factors were not incorporated, and that housing characteristics were not available.

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

1. Table 1: This table should include information on race and urban/rural status.
2. Table 2: It is unclear if these data represent all trimesters combined or a particular trimester.
3. The authors should justify the use of inverse distance weighting.

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance 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.