

## **Reviewer's report**

**Title:** Prenatal Exposure to Tetrachloroethylene-Contaminated Drinking Water and the Risk of Congenital Anomalies: A Retrospective Cohort Study

**Version:** 1 **Date:** 23 June 2009

**Reviewer:** Sylvaine Cordier

### **Reviewer's report:**

The authors present a very extensive survey of the potential health consequences on pregnancy of drinking-water contamination by tetrachloroethylene in Cape-Cod, Massachusetts in the late sixties. Conducting such a study required a considerable amount of work both for exposure assessment and identification of congenital anomalies but despite these efforts the study remains unfortunately underpowered for assessment of rare outcomes such as congenital anomalies.

Some points should be clarified in the manuscript:

the various routes of exposure to PCE should be described in the introduction  
the period of inclusion (1969-1983) should be justified precisely

the expertise of people in charge of visual inspection of maps and the quality control applied at this first stage should be specified

the reason why only 60 medical records out of 250 could be retrieved should be explained

one of the problem in this study is the validity of recall of minor anomalies. I would suggest to perform a sensitivity analysis selecting only major anomalies.

the model used for exposure assessment is very sophisticated but there is no mention of a possible seasonal variation, linked to temperature or water flow in the system for instance.

Is the last menstrual period the only measure available for dating the beginning of pregnancy?

Statistical analysis:

. including "number of prior pregnancy losses" among potential confounders may be an over-adjustment if the pregnancy losses occurred during the exposure period

. identification of one confounding factor at a time may not capture joint effects: a backward selection may be preferable

- the authors should be more prudent in their conclusions and discuss the fact that the exposed population with anomalies present a number of characteristics (such as higher alcohol consumption) that were not accounted for

**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.