Reviewer's report

Title: Dental amalgam and urinary mercury concentrations: a descriptive study

Version: 2 Date: 6 November 2012

Reviewer: Michael D Martin

Reviewer's report:

This is a well-done article with important information regarding population-based data on the exposure that individuals receive from Hg in dental amalgams. It should be published, but there are some essential deficiencies that need to be addressed for the article to be useful.

Minor Essential Revisions:

p. 5 par. 2 “In a five-year UK study....” : this was a study conducted in the United States. Is this a misprint, or did the authors cite the wrong study?

In “Methods”, p. 6, par 3.: “The variables included...” : What does this mean? Does this mean variables included in a multivariate analysis? Variables controlled for in some other way? This requires further explanation so that the reader can understand the analysis methods.

Likewise, in the same paragraph a reference is made to “weighted data”, but no description is given of what data was weighted, what it was weighted for, or how the weighting was done. Clarification is essential for the reader to understand what was done with the data.

In “Results”, p 7, par 1, there is a single sentence which begins with “It is important to note....”. This sentence is important, but only tells the reader that the results should be viewed with caution due to “high sampling variability”. “High sampling variability” could mean almost anything, and is not a helpful description of the issue. This needs significant expansion and clarification so that the reader can understand exactly what the authors are referring to. Quantification of the sampling variability issues would be important as well.

Discretionary Revisions:

The authors found that there were important gender differences in Hg excretion, as have other authors in the field (e.g. ref #15). This finding deserves mention in the abstract.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I have no competing interests