Reviewer's report

Title: Reanalysis of updated mortality among vinyl and polyvinyl chloride workers: confirmation of historical evidence and new findings

Version: 2 Date: 16 July 2007

Reviewer: Kenneth A. Mundt

Reviewer's report:

General

The authors have expended considerable effort improving the text of their manuscript, and commenting on the peer reviews they received, but they have done little to address some of the key points raised in these reviews. For example, given the small numbers of deaths by specific cause (for both 'exposed' and 'non-exposed' groups), why has mortality not been updated for the last several years? Since 1999 an additional 150-200 deaths would be expected in a cohort of this size/age). Increased numbers would improve precision of estimates and eliminate the perceived need to estimate 90% confidence intervals to produce statistically significant results.

Since the use of an internal comparison group (technicians and clerks) appears to be the main 'improvement' over previous analyses of the same cohort, why have they not made any effort (but to assert their belief in their response to the reviewers' suggestions) to demonstrate that this referent group indeed is comparable except for presumed exposure? I would think it would be scientifically prudent to evaluate more directly the potential role of confounding by smoking (or other SES-related factors) for several cancers, but especially lung cancer. While a traditional HWE might have been avoided, it is not clear that another comparison bias has not been introduced by limiting the comparison to a specific subset of employees. It should be straightforward for the authors to perform some focused validation exercises (demonstrating comparable smoking, education, earnings, etc. between compared groups) or at least subject their data to some sensitivity analyses to strengthen the credibility of their findings. This would be valuable even if only to demonstrate the groups are indeed comparable.

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

1. Perform validation exercises to demonstrate comparability of exposed and unexposed groups on factors that likely impact health status, especially smoking, alcohol consumption, education, earnings, or other SES-related indicators. The presumption (assertion?) of comparability is speculative and could be relatively easily substantiated if true. However, if these groups are not as comparable as
assumed by the authors, the study results as presented may be invalid.

2. Address why the cohort has not been updated, as the data analyses suffer from small numbers.

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

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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 whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

No change from time of original review.