

Reviewer's report

Title: Mortality among US employees of a large computer manufacturing company -- 1969-2001

Version: 1 **Date:** 23 August 2006

Reviewer: Robert Herrick

Reviewer's report:

General In general I think this is a very interesting manuscript that is a well-written presentation of an important set of findings. I have some general and specific comments that I would ask the author to address before the manuscript is accepted for publication, however.

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

1. Abstract, page 2, the methods section mentions that the US and California population mortality data were used for comparisons, but the discussion in the manuscript does not appear to have used the California rates, or at least these comparisons are not reported.

2. The conclusion appears to refer to the comparison between manufacturing and non-manufacturing workers (the contrast between those more or less likely to be exposed). Here and later in the manuscript, the author should address the lack of any direct evidence that the excess risks he observed are associated with solvent exposures, or exposures to any particular agent. The nature of the information he had available on work histories lead me to think that the more appropriate contrast is between workers exposed to manufacturing conditions vs. those who were not. This is not a trivial finding, and I believe it is the conclusion that is better supported by the data.

3. page 5, paragraph 1 is underdeveloped, the solvents mentioned are or were certainly present in semiconductor manufacture, but there is no mention of a range of other exposures that should be considered in a study of cancer mortality including metals (arsenic, beryllium, cadmium, chromium), as well as ionizing radiation. There is a nice chapter on exposures in this industry in the Burgess book (Recognition of Health Hazards in Industry), that could be a good resource for this discussion.

4. page 5, paragraph 2, this discussion of the types of cancer most likely to be expected among semiconductor workers needs to be documented and referenced,. What is the source of this information? A review such as that done by Siemiatycki (Environ Health Perspect 112:1447-1459 (2004) would be a good source. .

5. page 7, in the discussion of the work history data, this is mentioned later but it could be taken up here as well, was there any reason to think that the availability of work history information could be a source of bias? What patterns if any were there in the available data, that is was it more likely that work histories were available for certain periods of time (such as most recent employment), or that certain facilities were more likely to have work history information than others, or was it more random?

6. page 8, refer back to comment #1 on the choice of the comparison populations.

7. page 9, can you mention the rationale for choosing the second and third exposure subgroups (better work histories, longest duration, greatest exposure, or...?)

8. page 9 in results, the fact that the work history information was most complete for the people who worked in the most recent time period (and probably had lower exposures and may have had less duration) should be mentioned as a possible limitation of the study.

9. page 14, first sentence seems to be a speculation, as there is no direct evidence that any particular agent used in semiconductor manufacturing was associated with the cancer excess that were observed. This refers back to comment #2, as it is certainly true that these workers were exposed to solvents, but also to metals and radiation, and these cannot be ruled out. The data actually supports the conclusion that these mortality patterns are associated with exposure to manufacturing conditions.

10. page 14, paragraph 1, last sentence, so are the CA and MN facilities places where the clean room manufacturing was concentrated? What about facilities in New York and Vermont?

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

Discretionary Revisions (which the author can choose to ignore)

1. page 4, introduction, a little more detail on the previous studies would be nice, there is some specific information on the findings of the Scottish study, but not the UK and Taiwanese studies.

2. It would be nice to see a discussion of the strengths and limitations of the study, especially in view of the unique manner in which the population was assembled, through litigation.

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 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.