Author's response to reviews

Title: Effect of a chemical manufacturing plant on community cancer rates

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Version: Date: 20 February 2005

Author’s response to reviews:

Dear Editor,

Thank you for reviewing the manuscript Effect of a chemical manufacturing plant on community cancer rates. We were pleased to receive such positive comments on the paper. The suggestions of the reviewer are constructive and considered and we anticipate the resulting revisions to the manuscript with result in a higher quality paper being resubmitted for your consideration. Each comment is addressed separately in the text below, followed by a description of the resulting changes to the manuscript. Thank you for considering the revised manuscript for publication in BMC Public Health.

You should find the manuscript complies with BMC Public Health publication requirements.

Kind Regards,
Trish Mannes (on behalf of the authors)

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

Reviewer comment:
1. Page 6. Paragraph 2. The authors state that addresses for cancer cases that were unmatched or not located were excluded. How many addresses were excluded?

Author response:
In the study area we were unable to match or locate 21 addresses. The text on page 6 (paragraph 2) now reads: Addresses that were not located (21 addresses) were excluded. This information was previously contained in the discussion only.

Reviewer comment:
2. Page 6. Paragraph 3. Line 6-7. How similar are the control areas of Ryde and Concord that were not part of the study area to the study areas? Do the authors have any population information on this group, such as age, SES, etc.?

Author response:
No population information is available on the comparison areas of Ryde and Concord that were not part of the study areas, except age. Some age information from the most recent population Census is now briefly presented in the text. The absence of information on socio-demographics is discussed in the discussion section of the paper.

The text now reads:
The median age in the study area was 37 years, where the median age in Concord and Ryde SLAs was 34 and the median age in NSW was 35 years.

Reviewer comment:
3. Page 7. Paragraph 2. The authors state that they adjusted the estimated resident population (ERP) for the hospital population. Is the hospital population included as part of the ERP? If so, the authors should state it.

Author response:
In response to this comment the authors firstly note that an error was made in the initial version of the manuscript. The ERP for the collector district that included Concord Hospital was not adjusted, since ERPs are not available at collector district level. It was the Census count that was adjusted and this correction has been made to the manuscript. To respond directly to this comment - Yes the hospital population is included in the collector district population as the Census enumerates all people resident in the district on Census night. This point has been clarified in the text. The text (of page 7 paragraph 2) now reads: An adjustment to the population figures was required for the collector district that includes Concord Repatriation General Hospital (2001 Collector District 1410103). The NSW Cancer Registry, which provided the numerator data for this study, records residential addresses at time of cancer diagnosis, or death. On the other hand the Census, which provided the denominator data for this study, records all people present on Census night at a particular location, including people in Concord Hospital. We thus attempted to estimate the population of the collector district minus the hospital population.

Reviewer comment:
4. Page 8. Paragraph 2. Line 2-3. The authors state that the study area wasn't consistent over the whole study period and that some cases or deaths were not enumerated on the same basis as the population for all study periods. I'm not sure what they mean by this.

Author response:
The study area boundaries were not consistent over the whole study period as collector district boundaries changed over time. Some collector district boundaries changed between the Censuses in 1996 and 2001. This concept has been clarified in the text. The text now reads: The area that the 30-year SIRs and SMRs were based on was not completely consistent over the whole study period as the collector district boundaries change over time. Changes to collector district geographic boundaries occurred between the 1971 and 1976 Censuses and between the 1996 and 2001 Censuses.

Reviewer comment:
5. Page 9. Paragraph 2. The authors should consider including the 95% confidence intervals along with the SMRs and SIRs.

Author response:
Confidence intervals have now been added to SMR and SIR values in the text. Most of these changes have been made to results on pages 9 and 10.

Reviewer comment:
6. Page 9. Paragraph 2. Line 10. The authors should delete the reference to Table 3 in this sentence. I think they are referring to Table 1.

Author response:
The authors note this error in the initial version of the manuscript. The reference to Table 3 has now been changed to Table 1 (now Table 2 since the addition of the cancer types table - see response to reviewer comment 7 and 10).

Reviewer comment:
7. Is it possible to state the type and frequencies of the different cancers found in the study population?

Author response:
This additional information has been provided in the revised manuscript. The authors have provided information on frequency of the most common types/groups of cancers in a new table (Table 1 in version 2 of the manuscript). Please note the addition of text at the beginning of the results section to explain this table, which reads Table 1 provides details of the most common types of cancers observed in the study area during the study period.

Reviewer comment:
8 Page 10. Paragraph 2. Line 4. Why did the authors calculate SIRs and SMRs for the individual CDs for 25 year averages and not 30 year averages? Why was only NSW used as the comparison when all the other analyses used both comparison groups?
The SIRs and SMRs for individual CDs were calculated for 25 year counts as consistent geographic boundaries are not available across the 30 years for collector districts (see response to reviewer comment 4). Both NSW and the SLAs of Ryde and Concord were used for these comparisons. For convenience only the results for NSW were calculated as the Ryde and Concord comparison would be based on small numbers.

Reviewer comment:
9 Page 10. Paragraph 2. It's not clear from the paragraph or from table 2 what the distances the individual CDs were from the site. Perhaps the authors could include the distances for each CD in Table 2?

Author response:
The distance of the collector district to the former Union Carbide site has now been provided in Table 2 (now Table 3 since the addition of Table 1). The distance from the site is expressed in metres and is defined as the distance between the centroid of the collector district from the centre of the former Union Carbide site. Note Table 2 (now Table 3 since the addition of Table 1) for the amendment. The reader should also find Figure 1 instructive to determine the relative position of each collector district from the former chemical manufacturing plant.

Reviewer comment:
10 Page 10. Paragraph 3. The authors combined haematopoietic cancers (e.g. leukemia, non Hodgkins lymphoma, Hodgkins lymphoma) into one group and conducted analyses for this group as a whole. Is it possible to conduct separate analyses for the cancers in this group? If not, the authors, at a minimum, should state in the text and tables exactly how many of the different types of cancers are found in this group.

Author response:
The authors have considered this suggestion and have assessed that the numbers of each cancer in the study group are too small to provide reliable estimates. The authors have, however, accepted the suggestion to provide information on frequency of these types of cancers in a new table (Table 1 in version 2 of the manuscript). Please note the addition of text at the end of the results section to explain this table [see also response to reviewer comment 7].

Reviewer comment:
11 Tables 1, 2, and 3. The authors should also include the number of observed cases and deaths in the study CDs in the tables.

Author response:
This amendment has been made to Tables 1-3 (now Tables 2-4) as recommended by the reviewer.