# PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (see an example) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

## ARTICLE DETAILS

<table>
<thead>
<tr>
<th>TITLE (PROVISIONAL)</th>
<th>Mortality from Parkinson’s Disease among a workforce manufacturing paraquat: a retrospective cohort study</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTHORS</td>
<td>Tomenson, John (contact); Campbell, Clive</td>
</tr>
</tbody>
</table>

## VERSION 1 - REVIEW

<table>
<thead>
<tr>
<th>REVIEWER</th>
<th>Lesley Rushton, Reader in Occupational Epidemiology, Imperial College London, UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVIEW RETURNED</td>
<td>19/08/2011</td>
</tr>
</tbody>
</table>

### THE STUDY

It appears from the introduction that paraquat (PQ) was not the only exposure to which the participants could have been exposed - tarry by-products is mentioned but were there others and what were they? The discussion mentions one of the strengths is the availability of work histories hence duration of exposure, date of hire etc were available and also the potential to identify which workers were exposure at different broad levels of exposure. However, the work history is not mentioned in the methods and only a basic SMR analysis is carried out. Although the SMRs presented in Table 3 are less than 100 there may be differences or trends by e.g. date of hire, duration of exposure etc and also within broad group defined by job, e.g. longest held job or most highly exposed job. This could be explored if the numbers are sufficient. There appear to be quite a few monitoring data but no detail is given of whether this varies by job/task in terms of numbers of samples and average values. Are there any trends in levels over time. Would it be possible to extrapolate back to periods where no exposure measurements exist? If the answer is yes then these could potentially be used with the work histories.

### RESULTS & CONCLUSIONS

I think the authors should rethink the title of this paper. It is not really feasible to expect, with such a short follow-up to get enough cases of PD on death certificates for analysis. This could be disease to comment on but the analysis and hence title should focus on a general mortality analysis. To this end it would be helpful to see results for some of the malignancies where numbers allow, in Table 3 and comments if not results from other analyses as suggested above, including some analyses by job and by broad level of exposure e.g. highest etc.

### REPORTING & ETHICS

N/A

### GENERAL COMMENTS

N/A

| REVIEWER | Terry Brown  
|----------|-----------------------|
|          | Lecturer in Public Health & Epidemiology  
|          | Cranfield Health  
|          | Cranfield University |


REVIEWER COMPLETED CHECKLIST ONLY. NO FURTHER COMMENTS.

VERSION 1 – AUTHOR RESPONSE

We thank the reviewers for their helpful comments. We have addressed the points raised as follows:

1. From BMJ Open: please sharpen the Article Summary section to 'punchier' bullets.
   Done.

2. The contributorship statement needs to explain how the authors meet the ICMJE criteria.
   Done.

3. Regarding the competing interests statement, both authors should ideally complete an ICMJE disclosure form and the corresponding author should keep these. The statement then should be derived from this. Our sister journal the BMJ has some useful advice on how to do this here: http://resources.bmj.com/bmj/authors/editorial-policies/competing-interests
   Done.

Reviewer(s) Reports:

Reviewer: Lesley Rushton, Reader in Occupational Epidemiology, Imperial College London, UK
There are no competing interests.

4. It appears from the introduction that paraquat (PQ) was not the only exposure to which the participants could have been exposed - tarry by-products is mentioned but were there others and what were they?
   Details of other exposures have been provided, but exposure to PQ is the focus of the paper.

5. The discussion mentions one of the strengths is the availability of work histories hence duration of exposure, date of hire etc were available and also the potential to identify which workers were exposure at different broad levels of exposure. However, the work history is not mentioned in the methods and only a basic SMR analysis is carried out. Although the SMRs presented in Table 3 are less than 100 there may be differences or trends by e.g. date of hire, duration of exposure etc and also within broad group defined by job, e.g. longest held job or most highly exposed job. This could be explored if the numbers are sufficient.
   Some additional information has been provided on mortality from other causes other than those listed in Table 3. A description of the findings of mortality analyses for the group of 320 workers who ever held a high or medium exposed job has also been added (overall and by duration of exposure for this group of workers).

6. There appear to be quite a few monitoring data but no detail is given of whether this varies by job/task in terms of numbers of samples and average values. Are there any trends in levels over time. Would it be possible to extrapolate back to periods where no exposure measurements exist? If the answer is yes then these could potentially be used with the work histories.
   The information available is not good enough to perform a full quantitative exposure assessment.
as suggested. However, we have added discussion about PQ exposure trends.

7. I think the authors should rethink the title of this paper. It is not really feasible to expect, with such a short follow-up to get enough cases of PD on death certificates for analysis. This could be disease to comment on but the analysis and hence title should focus on a general mortality analysis. To this end it would be helpful to see results for some of the malignancies where numbers allow, in Table 3 and comments if not results from other analyses as suggested above, including some analyses by job and by broad level of exposure e.g. highest etc.

We have modified the title as suggested to indicate that the paper also contains information about general mortality patterns. However, the principal objective of the study was to provide information about PD in a cohort of workers with documented exposure to PQ, and we believe that this should remain the focus of the results and discussion. We consider that this aspect will be of more interest to the scientific community than the general mortality findings which provide little evidence of adverse effects. We do not agree with the comment about short follow-up (it is almost 50 years for many workers). We also consider that ~ 4 expected mentions of PD among a cohort PQ production workers means that the study compares favourably in terms of weight of information with the other available epidemiological studies, many of which have a low exposure prevalence and/or limited exposure information. Nevertheless, the secondary objective of the study was to update the mortality information supplied by Paddle et al (1991), in particular that relating to lung cancer, and we have provided more detailed information about such analyses as requested by the reviewer and described under point 5 above.

Reviewer: Terry Brown
Lecturer in Public Health & Epidemiology
Cranfield Health
Cranfield University

8. Can the person-years be included in Table 2

Added.
Mortality from Parkinson's disease and other causes among a workforce manufacturing paraquat: a retrospective cohort study

John Andrew Tomenson and Clive Campbell

BMJ Open 2011 1:
doi: 10.1136/bmjopen-2011-000283

Updated information and services can be found at:
http://bmjopen.bmj.com/content/1/2/e000283

These include:

Supplementary Material
Supplementary material can be found at:
http://bmjopen.bmj.com/content/suppl/2012/01/11/bmjopen-2011-000283.DC1

References
This article cites 32 articles, 3 of which you can access for free at:
http://bmjopen.bmj.com/content/1/2/e000283#BIBL

Open Access
This is an open-access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non commercial and is otherwise in compliance with the license. See: http://creativecommons.org/licenses/by-nc/2.0/ and http://creativecommons.org/licenses/by-nc/2.0/legalcode.

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Topic Collections
Articles on similar topics can be found in the following collections

Epidemiology (2149)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/