Reviewer's report

Title: Repeat workers' compensation claims: risk factors, costs and work disability

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Reviewer: N Cherry

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Ruseckaite and Collie Repeat WCB claims. BMC Public Health

This is an interesting and well written paper, with no major compulsory revisions identified. There are a few minor typographic errors (including an apostrophe after ‘workers’ throughout, not simply in the context of WCB - see, for example, in the Abstract Methods line 3) but nothing that could not be corrected by a scrupulous read through by the authors.

I have a few comments /suggestions for the authors to consider. These are listed below in the order they appear in the text, rather than order of importance.

1) Page 5 para 1 line 6. It would be helpful to have some indication of the level of medical expenses (say in the earliest and most recent year considered in the study).

2) Page 5 para 1 line 10. I did wonder whether cases were handled differently by the different private insurance companies and if the insurance company handling the claim should be added as a factor in the analysis.

3) Page 6. It is not clear who did the coding – the research team (OK), the VWA (OK) or each individual insurance organization. Please make this clearer in the text.

4) It would be good (ideally) to have some indication of the reliability of the coding. For example the VWA coding system was ‘mapped’ to a standard classification (TOOCS): I was somewhat surprised by the very small overlap (only 18.5%) in the affliction and body location of the first and second claim. How much of this apparent difference could be due to coding inconsistencies? In similar data in an earlier study it seemed that certain types of injury, lacerations to the hand or foreign bodies in the eye, for example occurred repeatedly in the same worker, but this does not seem so evident in this data set (perhaps because only more serious injuries are recorded).

5) Page 7 para 1 line 8-10. I wonder about the inclusion of disease in the 2nd claims (but not the first). You speculate about this on line 14 of page 13. Was it possible to do repeat the analysis excluding those with disease as the second claim? I think it would have strengthened the conclusions.

6) Page 9 para 2. I felt frustrated not knowing anything about the types of affliction compensated in these workers, and whether they were similar or different in the initial injuries of the single and repeat claim groups. Could a table...
on this be added?

7) The greater initial costs in the single claim group is fascinating but raises a number of questions that you might be able to explore in your dataset. First, do you know how many of your single claimants did not return to work after the first claim? If they did not, they were not at risk for a second claim (and should be removed from the analysis). Second, did you count the time to second claim from the time of the first claim or the time from return to work after the first claim? As the single claimants were away from work for longer, this could be a systematic bias in the survival analysis. Third, do we really know that these were single (‘first’) claims? The single claimants were older than the repeat claimants and so, presumably, had been on the labor market (and hence at risk) for longer. If you were to require a lead-in period of (say) 5 years with no previous claim before considering the ‘first’ claim, would this change your results/interpretation?

8) Page 19-20. I am slightly uncomfortable with all the p values quoted as if they were independent. I’d prefer an overall test of heterogeneity (does the distribution of gender differ between groups, for example) with a comment on where any differences occur. After all, if the differences in the proportion of men is significant, that for women is pretty well bound to be.

9) Page 23 This table is important. Did the survival analysis adjust for anything (gender, age, era, occupation at first claim)? If not, there is perhaps an opportunity missed.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests