Reviewer's report

Title: A hybrid expert approach for retrospective assessment of occupational exposures in a population-based case-control study of cancer

Version: 0 Date: 03 Sep 2018

Reviewer: Lin Fritschi

Reviewer's report:

Thank you for giving me the opportunity to review this interesting paper which has 2 main aims

1) To describe the hybrid expert approach to assessing occupational agent exposure in community-based studies

2) To compare two independent sets of assessments on different studies, one using the traditional expert method and the other using the hybrid method.

METHODS: I think the methods could be reorganized as they are currently a little confusing. No new information is needed, I suggest the following:

Start with a brief overview of the hybrid approach.

Then introduce the 2 source studies for the JEPs (the Montreal multisite study and the lung cancer study). There is no need to confuse matters here by saying that the multisite study is not being used in this paper.

Then explain in more detail the creation of JEPs and the add ons.

Then explain Proteus

Next explain how the hybrid approach worked on Proteus

Lastly explain the comparisons that will be done.

P11 is a little repetitive, why not just go through Figure 1 in order? It would be useful on Fig 1 if you mentioned that the "descriptive tables" are actually the JEPs (or at least I think they are)

P11 L40 what is a "combination welder"?

P11 L 50 what "source study" are you talking about here? Previously the lung and multisite studies had been called the source studies but I think here it is Proteus?
RESULTS

P13 L25 what do you mean by "job description"? is it all jobs in a single code or do you mean an individual's single job?

P13 L38 Remove the word "only" (20% is quite a lot of jobs to be missing)

P13 L25 How can there be 313 agents when you only assessed 209? Maybe add the number of agents to Table 1.

P13 L 25 start this sentence with "Using the hybrid system……"

P14 L15 Sub heading for when the comparison between the 2 studies starts

P15 L7 Explain what the "cumulative OR is related to" - what is the outcome here?

P15 Agreement was high, but only as to whether exposed or not. Agreement among exposed was much lower.

P15 L 43 what is this prevalence - concordant or discordant?

DISCUSSION

Overall, the discussion would be improved if it addressed the bigger picture of how this new method is useful to other investigators, and under what circumstances it does (or doesn't) improve assessment on existing methods.

Last paragraph could be omitted as it doesn't add much

P18 L56 What are the implications of this? Less likely to agree when prevalence is low in a job?

P 19 L4 This seems to suggest that investigators may as well just use a JEM?

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