Reviewer’s report

Title: Epidemiology and performance indicators for occupational health services

Version: 2 Date: 28 April 2014

Reviewer: Rebbecca Lilley

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Overall comment

Overall this paper is currently very confusing to read as there are poorly formed research questions/objectives and there is little appropriate detail to the methods. I am not convinced this paper in its current form presents a clear advancement of knowledge in the area of indicators for improving Occupational Health and the authors need to more tightly construct their rationale and methods and subsequent results and discussion to convince readers this is a valid contribution. This paper, therefore, needs considerable re-working prior to re-review for publication. The authors need further review of the structure of the paper by someone with English as a first language to make the paper more readable and to make paper’s key messages easier to follow by readers. The title needs more detail to convey that this is a feasibility study and to indicate the Belgium context of this study.

Minor essential

Introduction
1. Replace “… with “etc.” when indicating a list continues. Refers to introduction, paragraph 4 & methods, paragraph 4.
2. Remove the word “global” in paragraph 1 as it is misleading to the reader that this is a worldwide practise. I think you mean “occupational health and safety practice in general includes …..” or you may even be referring to practice in the EU. Whatever you do mean it is not clear to the reader.
3. Paragraph 3, sentence 3 can you give an example of how internal and external services differ by “size and activity of the company” for international readers.
4. Paragraph 3, sentence 3 what do you mean by “internal respectively external” - this currently makes little sense in the sentence.
5. Whole paper – refer to “internal/external/mixed SPPW” as “internal/external/mixed SPPW providers” to aid reader understanding that these are actually providers of the SPPW service.

Results
1. Expert review, paragraph 2 – what does “resp.” mean? If it is an abbreviation spell the word out in full.
2. Abbreviations need to be explained in full at their first use, such as ICD and
WHO.
3. Check for spelling mistakes throughout the results.

Discussion
1. Check for spelling mistakes throughout the discussion.
2. Paragraph 5. It is not clear why the first sentence starts with “Despite”. It makes no sense in the current sentence.
3. Paragraph 5, sentence 3. Replace the term “higher” with “earlier” which is more grammatically correct.

Major compulsory

Introduction
1. The quality of English was awkward at best which hindered reader understanding of the rationale for the research and hence, the purpose of the article. Please obtain a reviewer by a person with English as the first language to tighten up the rationale for the research. There are many awkward sentences that do little to construct a clear rationale for the study.
2. There seems to be some misuse of terms around surveillance and individual health monitoring of occupational health. At times the authors refer to “surveillance” when it is obvious they actually mean “personal monitoring” at an individual level. For example paragraph 4 “Each Belgian OHS has its own way of collecting and reporting data main with the objective to compile a medical file for surveillance and follow-up of an individual employee”. Surveillance should be replaced with “monitoring” as the sentence obviously refers to individual level data. I have never heard of “medical surveillances” – do you mean personal monitoring or population based occupational health surveillance?
3. Replace the term “accidents” with “injury events”. For rationale for not using the term “accident” see “Langley J, The need to discontinue the use of the term accident for non-intentional injury, Accident Analysis and Prevention, 1998: 20(1); 1-8.”
4. Paragraph 4 – you define “quantity” but do not define what you mean by “quality”. Please add a definition for this to aid reader understanding.
5. Paragraph 5 is difficult to follow as it suddenly discusses “two groups depending on the present or absence of a well-defined occupational risk”. It makes little sense to the reader what the purpose of this paragraph is and how it adds to your rationale for conducting this study. I believe you are trying to argue that the administrative data returned to Belgium Authorities from OHS or SPPW providers is potentially a good source of data for working population OH surveillance, epidemiological studies and for personal monitoring of individual’s OH status. This rationale needs to be conveyed more clearly in this paragraph.
6. Paragraph 6 needs references to support your statements ie. drop in incidence of pneumoconiosis etc.
7. Paragraph 7 needs substantial reworking. At present your research questions
are poorly formed and do little to convey to the reader what you actually are interested in testing in the rest of the paper. For example, while you may ultimately be interested in developing a system by which you can use the administrative and audit OHS and SPPW data collected by Belgium authorities for surveillance and prevention purposes, you have other questions/objectives you have actually tested in this paper as steps in assessing the feasibility of this data for electronic surveillance. Your research questions/objectives here should reflect this ie. Establish a set of proposed epidemiological and performance indicators to inform OH prevention at work using existing literature and expert reivew, establish the feasibility of using the identified epidemiological and performance indicators by assessing the relevance and usefulness of these indicators to OHS and SPPW providers of the data etc.

Methods

1. What is the purpose of the literature review? Was it to establish a list of possible OHS indicators and what is this list to be used for? It is not clear in the paper.
2. Refer to your indicators in a consistent order to aid reader understanding. In the introduction you mentioned epidemiological indictors before performance indicators so keep this order throughout your paper.
3. Performance indicator list should be consistent with the epidemiological list so include some examples to help the reader follow your methods.
4. Expert review. What is the purpose of the expert review? Did you generate a final list after this stage that was used in the feasibility study? It is unclear what was achieved by the expert review and how this feeds into the feasibility study. How did you generate a final list – what did you do when experts disagreed about indicators and what criteria did you use to assess agreement? How did you assess the validity, reliability, sensitivity and specificity exactly – did you look at published literature on these? It may be helpful to look at the following reference: “CDC (2001) Updated guidelines for evaluating public health surveillance systems: recommendations for the guidelines working group. MMWR 50(Rr-13) 1-35.” From the results it seems that you have actually done more than just consult with experts, but this is not clear in the methods.
5. Feasibility study. What is the purpose of the questionnaire? Was it to access the relevance and availability of the indictors you identified at the literature review and expert review stages? This is not clear. How will you access relevance and availability exactly – this isn’t clear in this section. What are the questions you asked in the questionnaire? How was the survey sample selected and what type of survey was this ie telephone, face to face etc.
6. Overall it is not clear in the methods how the literature review and expert review feed through to the feasibility study and the role each step plays in addressing the research questions/objectives.

Results

1. Once the research questions/objectives are re-worked the results will need to be re-worked to reflect the findings in relation to these objectives.
2. Expert review. A table is needed to aid the reader in understanding the content of the final set of data to be tested in the feasibility stage. A summative table is a more efficient way to convey the final content to a reader. Use summative categories of the indicators included, some selected examples and, possibly, the sources of these indicators as well.

3. Feasibility study. What is the purpose of the lists of epidemiological and performance indicators? It is not clear to the reader why these examples are listed here.

4. External, internal & mixed OHS and SPPW providers. As there has been no description of what the questionnaire contained so much of the results are confusing to the reader. There is much discussion of detailed results but these come out of the blue to the reader. Detailed findings on the proportion (and number) of the relevant indicators, such as medication, sick leave and workstations etc. should be included in a further table.

Discussion

1. Once the research questions/objectives are re-worked the discussion will need to be re-worked to reflect the findings in relation to these objectives.

2. Paragraph 1. I don’t follow the argument given by the authors that the epidemiological indicators need to be reported separately and to separate authorities, if not this epidemiological data could be biased. The authors should get epidemiological advice on this statement as this is very confused. Ultimately each stream of data (external, internal and mixed) represents different types of employers so each stream will be biased towards different industries, sectors and company size. Keeping the data separate will do nothing to adjust for the bias inherent in each stream of data.

3. Paragraph 2. As there was no description of how the sample was selected it is difficult to follow how selection bias could influence these findings. The authors need to clearly describe the influence of selection bias on their findings. Also I think you mean “quantitative” data not “qualitative” in this paragraph.

4. Paragraph 3. A diagram of your “chain of indicators” either here or when they are first introduced would allow the reader to understand your rationale for the typology of indicators collected.

5. Paragraph 4. A sentence discussing the downsides of sentinel surveillance is needed to balance out the discussion of the potential advantages of sentinel surveillance to collect OH data.

Conclusion

1. Once the research questions/objectives are re-worked the conclusion will need to be re-worked to reflect the findings in relation to these objectives.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being
published

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

**Declaration of competing interests:**

I have not competing interests to declare.