Author’s response to reviews

Title: Web-based Infectious Disease Surveillance Systems and Public Health Perspectives: A Systematic Review.

Authors:

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Author’s response to reviews:

Dear Editor:

We greatly appreciate your efforts to carefully review the paper and to provide valuable suggestions. We hope that the revised version can meet the journal publication requirements.

Response to Editor:

The authors made a major and highly appreciated effort to further refine their manuscript. In my opinion, the manuscript is now almost ready for acceptance, but there are still the following minor issues that the authors should address:

1) I would like to insist again on my previous point 1, which is also in line with the previous points 2 & 3 of reviewer 1 and the previous point 2 of reviewer 2: As the work is designed and also labelled as a SYSTEMATIC review, the reporting should also be as SYSTEMATIC as possible.

1.1) The study objective is mentioned in the last sentence of the "Background", but the formulation should be more precise and also include the previous point 2 of reviewer 1 (and the information provided by the authors in their response). Hence, I suggest revising the respective sentence as follows:

"The objective of this systematic review was to investigate well-established web-based infectious disease surveillance systems that focus on infectious disease occurrence and the early detection of outbreaks. Our investigation can serve as an overview and starting point for readers interested in the topic and as a useful reference for the design of prospective infectious disease surveillance systems in countries that lack such tools. "
Please carefully verify my suggestion and also further adapt if need be. NB: The reader may wish to have this information already at the beginning of the article and not only in the conclusion.

Response: We appreciate your considerate comment and your suggestion for the revised sentence. We understand that the formulation of the study objective should be more precise and also as systematic as possible. We value highly of your suggestion and we have included this information in the Background section, line 11 on page 5.

1.2) The reporting of the methodology still needs a little bit more precision and the "Methods" and "Results" should not be mixed up.

1.2.1) In the section "Eligibility criteria and information sources" the authors provide the key words used in the literature search and in the last sentence they say that "some of the vague terms were re-sorted into “medical subject headings”, which brought forth more specific and relevant results." First, the key words provided in the text and those listed in the box in Figure 1 are not exactly the same - please correct. Second, please also list the exact medical subject headings (MeSH) used. NB: All exact search terms and their specification (e.g. simple key word search? search as MeSH terms?) should be unambiguously disclosed.

Response: Thank you very much for your comment. We have corrected so that the key words used to conduct the search, which are also provided in the text, match with those listed in the box in Figure 1. Next, we have made sure that all exact terms and their specifications, indicating whether they were searched under Medical Subject Headings or All Fields, are completely disclosed. This amendment has been made in the “Eligibility criteria and information sources” part in the Methods section, line 5 on page 6.

1.2.2) In the section "Eligibility criteria and information sources" it is stated that PubMed, Web of Science and EMBASE were considered. However, in the following section "Study selection process" the authors write that "across the three databases and the CDC website, 4,650 articles were collected”. Was the CDC website considered as a data source or not and if it was considered how exactly?

Response: Thank you very much for your comment. Along with the databases stated, the CDC website was considered a data source. By consulting the CDC website, we were able to gain knowledge on the current disease outbreaks and how surveillance systems are operated under this government-run department. There are supplementary articles on the CDC website that provide general information on the subject matter such as National Notifiable Diseases Surveillance System and National Electronic Disease Surveillance System via a form of factsheet.

1.2.3) The first two sentences in the section "Study selection process” are unclear/potentially misleading. From all the revisions made, I guess the study approach was as follows: First, the authors systematically searched the three databases PubMed, Web of Science, and Embase. Second, the 4,650 articles identified were meticulously checked for relevant information on web-based infectious disease surveillance systems. Third, those web-based infectious disease

surveillance systems which were mentioned in at least five studies were further considered. Finally, all identified evidence was further complemented with the authors' expert knowledge and personal archives. The last step also included the consultation of the CDC website and the inclusion of the "GET WELL" system, which was only mentioned in four studies (see Figure 1) and would have been omitted without this last step. All these steps are systematic and perfectly fine, but should also be very clearly reported in the "Methods" of the manuscript. Please carefully verify whether my understanding of your approach is correct and further refine the "Methods" section accordingly.

Response: We appreciate your comment very much and correctly understanding of our study approach. We have explicitly reported all the steps taken to conduct the research process (Methods section, line 16, page 6)

1.2.4) Related to my point 1.2.3) above: If my understanding of the approach is correct, the authors should also indicate whether they identified other web-based infectious disease surveillance systems in their systematic review, which were mentioned in only 1-3 studies and therefore not further considered in the present manuscript. If this was the case, the names of these additional systems should be briefly mentioned/listed.

Response: Thank you very much for your comment. We agree that it is essential to briefly highlight those systems that were mentioned in the studies examined although they did not as they were not discussed as many times as other systems. The web-based surveillance systems that were mentioned quite frequently next to the 11 reviewed systems were Argus, Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE II), International system for Total Early Disease Detection (InsTEDD) and Global News monitoring for Disease Outbreaks and Surveillance (GODSN). We have made revision about this part in the “Study selection process” part in the Methods section, line 1 on page 7.

1.2.5) The newly inserted sentences in the section "Study selection process" on the number of studies initially obtained, excluded and finally included and on the resulting number of web-based infectious disease surveillance systems identified and further considered by applying their methods should be moved to the results section together with Figure 1 (e.g. in a new and short sub-section entitled "Numbers of articles identified and web-based surveillance systems further considered" right at the beginning of the "Results"). Of note, the PRISMA statement should then also be revised accordingly.

Response: Thank you very much for your comment. After meticulously considering your suggestion, we have created a new, terse sub-section entitled “Numbers of articles identified and web-based surveillance systems further considered” at the very beginning of the Results section. Figure 1 has also been moved to below the new paragraph (Results section, line 15, page 7). In accordance to this adjustment, the PRISMA checklist has also been revised.

2) The authors missed one point from reviewer 1 (second point in the minor issues) and I also think that the word "bioterrorism" in the first sentence of the section "Development of web-based surveillance systems" is wrong. I suggest revising this sentence as follows:
"As newly emergent and resurgent infections have progressively become a significant threat to the global community, a more systematic approach is needed to respond to these challenges."

Please carefully verify my suggestion and further refine if need be.

Response: Thank you very much for your comment and your suggestion for the revised sentence. We apologize for accidentally excluding this point from the previous reviewer’s comments. We respect your suggestion and have included the corrected sentence in the manuscript after careful verification (“Development of web-based surveillance systems,” second paragraph of the Results section, line 6, page 8).

3) It is great that the authors included some reflections on the limitations of their work. However, they should not be too harsh and overcritical with their own work in the section entitled "Limitations". As it currently stands, it would provoke major doubts about most of their findings and conclusions and as an editor, I would probably have to reject the article (“...the review is highly subject to selection and reporting biases...” / "Prospective research may benefit greatly from adhering to a more robust and refined search strategy"). I assume that this is a minor language issue and that nuances result in a misleading message. Hence, I suggest slightly rewording the whole section as follows:

"This review has several limitations despite employing a systematic review approach and aiming at providing a well-structured overview of web-based infectious disease surveillance systems. Due to limited article accessibility, the literature search was restricted to published articles from a limited number of selected sources. However, as a consequence, we cannot rule out a certain selection and reporting bias in our review. Nevertheless, the here reported work may serve as a good overview and starting point for readers interested in web-based infectious disease surveillance systems. Our hope is that future efforts will further complement and advance our work and provide a continuously updated, more comprehensive and at the same time more detailed picture of the currently existing web-based infectious disease surveillance systems."

The authors should carefully consider their original text and my suggestion and check which one is a better reflection of their work. They may also further refine my suggestion as they see fit. Furthermore, they may also insist on their original version, but they should be aware of the meaning and potential consequences of their statements.

Response: We appreciate your insightful comment. We have thought through your comment regarding the section entitled “Limitations.” We have also meticulously considered your suggestion by comparing it with our original text. We agree that our original reflection may have been inappropriately critical that may provoke doubts and misleading message for readers. We have gratefully adapted your suggestion in the manuscript (Limitations section, line 1, page 16). Thank you very much.