Author's response to reviews

Title: Benchmarking surveillance systems: A software tool for creating simulated outbreaks

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Author's response to reviews: see over
Dear BMC Editorial Board:

Thank you for your response and reviews regarding 'Benchmarking surveillance systems: a software tool for creating simulated outbreaks'. We found the reviews helpful and have revised the manuscript accordingly. Enclosed is a point by point response to the reviewers’ comments and the revised manuscript.

We appreciate your consideration and effort.

Sincerely,

Christopher Cassa, Corresponding Author
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**REVIEWER 1.**

**Major compulsory revisions**
None recommended.

**Minor essential revisions**
At Dr. Buehler’s excellent suggestion, the term ‘handful’ of anthrax cases has been replaced by ‘eleven infections, resulting in five deaths’. (Page 8, Paragraph 3)

**Discretionary revisions**
We believe that the additional figure that Dr. Buehler recommends strengthens the paper. Hence, we have created a graph that illustrates the temporal patient distribution with the injection of a linear-growth cluster in the highest and lowest-volume weeks at Children’s Hospital Boston. Figure 4. Text to support the figure is included as follows “The temporal progression of an linear-growth cluster spanning 7 days (containing a total of 56 points) is graphed when injected into a low-volume week (120 visits, 07/15-21/2001) and a high-volume week (472 visits, 01/14-20/2001) in Figure 5.” (Page 7, Paragraph 3)

**REVIEWER 2.**

Dr. Valleron appropriately points out that this manuscript is not structured as an epidemiological research paper. Rather, we have chosen to submit it as a Software article. BMC Medical Informatics and Decision Making defines this type of article, as one presenting “software applications, tools or algorithm implementations” or publishing “descriptions of their code” ([http://www.biomedcentral.com/bmcmedinformdecismak/ifora/?txt_jou_id=2041&txt_mst_id=1009](http://www.biomedcentral.com/bmcmedinformdecismak/ifora/?txt_jou_id=2041&txt_mst_id=1009)).

We have added emphasis to this effect on the title page where we have changed “These results were presented” to “This software was presented” (Page 1, Paragraph 1). We have also modified the abstract methods section to include the following statement: “To evaluate the output of this software tool, sets of test clusters were created and graphically rendered.” This change clarifies that this paper evaluates a software tool and its output (Page 2, Paragraph 2).

**Major Compulsory Revisions**

In terms of the power of showing how this tool would be applied in a more traditional epidemiologic framework, our group has submitted such a manuscript to BMC Medical Informatics and Decision Making that that is currently under review. In this paper, we use the tool to benchmark a surveillance system and to evaluate sensitivity and specificity of algorithms intended to detect respiratory infections. We note that we have taken the opportunity to review the advantages and disadvantages of submitting this work as two separate manuscripts; we still believe that these two papers would not combine well into a single manuscript.
To address the epidemiological modeling concerns that Dr. Valleron presented, I would like to emphasize that this toolkit does produce spatial clustering datasets for use in epidemiological investigations and clustering algorithm research. As described in Mandl et al., our group has presented an effective way to use a toolkit such as the cluster generator to inject artificially-generated controlled-feature-set clusters into larger datasets to calibrate detection algorithms and real-time detection systems. While the temporal patterns that are included in the toolkit are basic, we note in the paper (Page 6, Paragraph 1) that “Additional date algorithms can be readily added to AEGIS-CCT if they are implemented in Java.” We have improved the clarity of this statement to now read, “Additional epidemiological date algorithms can be added by other users to the AEGIS-CCT by implementing a method to assign a specific temporal distribution within an array in Java.”

Minor Essential Revisions

With regard to trouble setting up the software, we are committed to supporting the Java package for the cluster generator that is available at the Sourceforge site, http://www.sourceforge.net/projects/chipcluster/. We have enhanced the installation packages that are available for download and now include Windows and MacOS-X binary installer files. Additionally, at the Sourceforge site, any user can submit support requests and report any bugs or inconsistencies in the code or at program runtime.

References