Author's response to reviews

Title: Designing and Conducting Tabletop Exercises to Assess Public Health Preparedness

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Author's response to reviews: see over
Dear Dr. Lolu da-Silva

Enclosed please find a revision of our paper now entitled, “Designing and Conducting Tabletop Exercises to Assess Public Health Preparedness for Manmade and Naturally Occurring Biological Threats.” We appreciate the careful review the manuscript received and believe it is much stronger as a result. We have addressed all of the compulsory changes. A detailed description follows.

Reviewer: Daniel Barnett

General comments:

“The paper is well-written, but its inherent methodological limitations impede a meaningful interpretation of its findings. As the authors appropriately acknowledge, the tabletop exercises employed a variety of delivery formats, scenarios, and objectives; this use of different instruments and metrics poses a barrier to definitive interagency comparisons. The health department sites were not randomly selected, and the sample may be biased toward health departments with larger budgets that can afford to bring in outside consultants to coordinate tabletop exercises. As no health department was exercised more than once, improvements in public health performance over time cannot be truly ascertained.”

The current evidence base for public health preparedness is very limited. This paper is an attempt to expand this limited evidence base. As we now describe more clearly in the text (p 11, para 3), we did not conduct exercises with a randomly selected set of health departments, and do not propose that our findings are generalizable. However, we did conduct exercises with a wide range of health departments that differ in size and structure. Most were not highly resourced. More importantly, RAND conducted these exercises free of charge to health departments, so they did not spend their own resources to “bring in outside consultants to coordinate tabletop exercises.” We also did not set out to measure change over time, but were more struck with the general trends we observed over the course of time. We make this clearer in the text as well (p 11, para 3).

Given the limited evidence base in the field, however, we believe that even non-experimental evidence can be valuable in helping the field progress. The existing literature in this field (now summarized in an expanded literature review in the introduction) relies almost solely on case reports of single tabletop exercises that typically deal with only one disease. When viewed in that light, this relatively large series, and the attempt to identify commonalities in lessons learned, is a contribution that we hope will advance the field.

“The study does not address the potential influences that external events may have had on health departments' performance during the 2003-2006 time window (e.g., Hurricane Katrina in 2005). The proposed
recommendations about conducting tabletop exercises, while reasonable and well-described, are not particularly novel. Finally, the paper does not offer evidence-based support for its conclusion that "tabletop exercises...should involve external exercise developers." (p. 11) This statement has important implications for resource-strapped local health departments whose budgets may be unable to accommodate the hiring of outside expertise for tabletop exercise design and evaluation.”

The reviewer is correct that we are unable to assess the potential of external events on performance. We highlight this limitation in the discussion section (p 11, para 3) but also note that our exercises were complete before Katrina struck. While the recommendations may not seem particularly novel to the reviewer, they represent lessons drawn from a large number of exercises. We are frequently asked for advice about constructing exercises, and generally health departments find these recommendations to be useful. We agree with the reviewer that the statement about external exercise developers was too strongly worded and did not reflect our intent. We removed this statement from the paper (see our response to reviewer comment 5 below).

Major compulsory revisions

**Reviewer’s comment 1:** “More detailed description/examples of the actual tabletop instruments used, along with a timeline for administration of specific tabletops at specific health departments.”

- **Authors’ response:** The templates for many of the tabletop exercises that we have developed are available on the internet free of charge. We revised the paper to include references to the web links for two of these documents in the methods section (p 4, para 4).

**Reviewer’s comment 2:** “Expanded background literature review on tabletop exercises in particular.”

- **Authors’ response:** We have expanded the background literature review in the introduction as suggested. Specifically we added (p 3, para 4): “These exercise programs have had varying goals, including building relationships among stakeholders [7-8], training staff [9-11], and evaluating preparedness levels [12-13], and they have been used for a variety of purposes, including to identify gaps in preparedness [14], make recommendations for improving preparedness [15], and identify variations in preparedness across public health agencies [16]. These exercises have involved diverse groups of stakeholders involved in public health preparedness, such as representatives from public health [17], health care [18], agriculture [19], and emergency medical services [20]. Most exercises have been designed around a single disease specific outbreak, such as smallpox [21], pandemic influenza [22], or a novel virus [23].”
Reviewer’s comment 3: “Discussion of the role that external events (e.g., Hurricane Katrina) may have had during the study interval.”

Authors’ response: We added the following limitation to the discussion section (p 11, para 3): “We also cannot assess the potential influences that external events (e.g., hurricanes, outbreaks, etc.) may have had on health departments during the time period of our work, but it is noteworthy that all exercises were concluded before Hurricane Katrina struck.”

Reviewer’s comment 4: “More detailed demographic description of the health department exercise sites.”

Authors’ response to comment 4: We added a table (Table 1) that provides basic demographic details about participating health departments. However, our confidentiality agreements with participating sites prohibit us from identifying them. Further, since this is not a random sample and we do not propose that the findings could be generalized, we believe that such information would be of limited usefulness.

Reviewer’s comment 5: “Evidence-based justification/clarification of conclusion that ‘tabletop exercises...should involve external exercise developers.’”

Authors’ response to comment 5: In retrospect, it appears that the language for this sentence was too strong and did not reflect our intent. We have removed this sentence from the text.

Reviewer’s comment 6: “Additional references from peer reviewed literature to support the observations about changes in public health preparedness during the interval studied.”

Authors’ response to comment 6: Additional references to support these observations were added to the discussion section which now reads: “Furthermore, similar observations regarding improvements in public health preparedness during the same time period have recently been reported by others [24-25].”

Reviewer’s comment 7: “Assessment of demographic representativeness of exercised health departments in the study, with respect to local and state health departments across the U.S.”

Authors’ response to comment 7: This is not a random sample and we have not attempted to make this sample representative of all US health departments. We have, however, included a new table in the document (Table 1) that includes general demographic information of the health departments that participated in the exercises.
Reviewer: Edbert Hsu

Major compulsory revisions

Reviewer’s comment 1: “The title should be revised to reflect that the tabletops focused on bioterrorism or infectious agents, as opposed to other types of high-impact public health emergencies.”

- Authors’ response: The title has been revised to “Designing and Conducting Tabletop Exercises to Assess Public Health Preparedness for Manmade and Naturally Occurring Biological Threats.”

Reviewer’s comment 2: “What items were included on the exercise evaluation forms completed by the participants?”

- Authors’ response: The text was revised to make clear the types of items included on the exercise evaluation forms. Specifically, the text at the end of the methodology section now reads, “These consisted of a series of structured and semi-structured questions that asked participants to discuss what they learned during the exercise and to evaluate aspects of the exercise structure and conduct. For example, participants were asked to identify key gaps in preparedness that occurred during the exercise and to identify the most useful thing they learned during the tabletop exercise.” (p 5, para 3).

Reviewer’s comment 3: "Exercises should be designed to fulfill a specific objective."

- Authors’ response: We replaced the word with the typographical error (fulfill) with the word achieve (p 8, para 4).

Reviewer’s comment 4: Based on the authors' experience, please include in the discussion some suggested examples of quantifiable performance measures.

Authors’ response: The discussion section was revised to discuss these measures in greater detail. Specifically it now reads: “These quantifiable measures can range from simple checklists to Likert rating scales to scorecards. For example, in a series of our exercises we used checklists to assess the performance of health departments related to surveillance, risk communication and other functions” (p 11, para 1).

Other suggested revisions

Reviewer’s comment 5: (discretionary revision) “Please expand Table 1 to specify additional information that identifies each tabletop conducted by geographic location, agent/disease exercised, types of participants, facilitator involvement, etc. ”
**Authors’ response to comment 5:** We have added a new table to the document (now Table 1) that contains this information.

We hope these revisions are satisfactory and address the reviewers concerns. Please let us know if you need additional information or want to suggest additional changes. We look forward to hearing from you.

Sincerely

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