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Review and rebuttal of the paper

## Practice as You Play: Using Homeland Security Exercise and Evaluation Program (HSEEP) Exercises to Evaluate a Storm Decision Support Tool

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Editor handling the paper: Vana Tsimopoulou

The reviewers remain anonymous.

## Review Round 1

Thank you very much for the time the reviewers have taken to provide feedback on our manuscript. We've made a number of edits based on their comments, as indicated below.

### Reviewer A

This manuscript presents a timely and compelling case study on the use of HSEEP-based functional exercises to evaluate the implementation of a storm decision-support tool (CHAMP) in the context of emergency management. The paper provides detailed background, methodology, results, and discussion, demonstrating the effectiveness of exercises as a means of integrating research tools into operational workflows. The research is clearly grounded in implementation science and participatory methods, contributing a novel and pragmatic approach to the emergency management field.

The use of HSEEP for evaluating implementation of research-based tools is a valuable innovation, addressing the persistent gap between academic research and practical emergency management.

The manuscript is well-organized and clearly written, with a logical flow from background to conclusions. The paper provides a detailed description of the CHAMP system, exercise design, and evaluation methods, allowing for reproducibility and potential adoption by other states or regions. The use of participatory action research and integration with local knowledge significantly increases the credibility and applicability of the findings.

Recommendation: Revisions Required

### Major Comments

1. **Generality and transferability:** While the Rhode Island case is well-motivated and thoroughly documented, the manuscript would benefit from a short discussion on the potential generality and transferability of the CHAMP system or the implementation exercise approach. Specifically, it would be helpful to address how CHAMP could be adapted to other geographic or institutional contexts with different infrastructure systems, data availability, or emergency management structures. Such a discussion would strengthen the paper's relevance beyond the specific case study and highlight the broader applicability of the presented methodology.

This is an excellent point. We've added language in Section 2.2 to explain how CHAMP can be implemented in other locales, and cited a recent example of creating a standalone CHAMP system for southeastern Connecticut. We also

added language to the end of Section 6 to reference this important aspect of CHAMP in our conclusions.

2. **Validation scope:** The validation exercise using the “Festivus Storm” is briefly mentioned but could benefit from more technical detail.

Thank you for this suggestion. We have added additional detail to the “Exercise 1” description under the Section 3 introduction and also referenced findings at the end of the Section 4 introduction.

## Minor Comments

- **Line 15, Typo:** The sentence “Survey of run-up heights” in the Results section appears to be a placeholder or out of place.  
Thank you for catching this, the extraneous phrase has been deleted.
- **Figure 2:** Higher resolution would improve readability.  
Unfortunately, this is a screen grab from the dashboard itself and there isn't a practical way to increase the resolution.
- **Figure 3:** Bigger font sizes are highly recommended for this nice figure.  
Thank you for the suggestion, we have changed to a different font and increased the text size.
- Some direct quotes in the manuscript are **italicized** (e.g., in section 1 line 4-6), while others are presented in regular font with quotation marks.  
Thank you for catching this, we've corrected the formatting accordingly.
- **Reference formatting:** A few in-text citations lack consistent formatting (e.g., some references like DHS 2020 use “:” for page numbers, others do not).  
The “:” and page number is used in the two places where there is a direct quote but should not be needed for the remaining citations. We have, however, reviewed all citations to be sure this is consistent.

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## Reviewer B

The article is well-written, rigorous, and timely. It demonstrates both methodological innovation (using HSEEP for implementation research) and practical value for emergency managers. As a potential end-user of this method, I do regret that CHAMP does not yet include riverine or precipitation-driven flash floods. And also especially for smaller agencies, it can be difficult to use the database given their lack of resources. It would also be very valid for us as end-users to include some critical data layers such as evacuation, routes, hospitals etc. Perhaps this can be done in future research projects. I would be very interested to see how we could scale this method, nice work.

Recommendation: Accept Submission