

# Peer Review Activity Standard Operating Procedure

*Created by: Sara Loo*

*Implemented: October 2022 at the AMPH Workshop 1*

*Last Revision: November 30, 2022*

*Contact: Erica Carcelen ([ecarcel1@jhu.edu](mailto:ecarcel1@jhu.edu))*

---

## Peer Review Activity: Providing Feedback for Infectious Disease Models

### Purpose

The overall goal of peer-review is to obtain a deeper understanding of individual models, make suggestions where relevant, and generate discussion and sharing of ideas between groups.

This process will benefit teams by providing an opportunity to get external insight into challenges or issues, suggestions on different data, and to help other teams with their models. This should be comfortable and informative – the goal is not to find problems, but to learn more about models and developing them, and if needed, identify issues and make suggestions. We want to foster open science and discussion around the development of models and any results.

In a broader sense, learning about the similarities between models may help understand if and how certain components of a model lead to specific dynamical features, or better performance in certain contexts or time frames.

### Participants

All teams interested in receiving feedback on their model should participate in this activity, which is split into 2 sessions. Participants will be reviewed by other modeling teams in one session and will review another team's model in the other session. Each team will be reviewed by at least 2 reviewers from another team. Organizers should assign review groups such that each reviewer represents different organizations and years of experience, one instructor is present to facilitate and take notes, and all members of the team being reviewed can be present to answer questions. One instructor should not be assigned to a review group to keep the activity on time.

### Prerequisites

- Review group assignments: 1 modeling team, 2 reviewers, 1 notetaker
- Peer Review Form to take notes



- Model details for reference (optional)

## Procedures

### *Step 1 - Before the Activity*

Ahead of the activity, reviewers should become familiar with the models being reviewed. This includes the research question, inputs, parameters, model structure, assumptions, and results if available. Depending on how developed the model is, teams can present information about their project or provide model details in a shared spreadsheet. Additionally, all participants should review the Peer Review Form prior to the review sessions.

### *Step 2 - Review Sessions*

Peer review groups should be conducted during at least two 45-minute sessions. During the session, the 2 reviewers will use the provided form and any model details available to gather information and questions about the model being reviewed. Groups will use the provided evaluation report to assess model performance and trends over the course of the rounds. Additional details or divergences from what is reported should be recorded in the model details spreadsheet or on the review form. If substantial additional detail is needed, a task should be added to the goals to complete this after the SMH meeting. Set some agreed upon goals with the reviewed team for the coming 6-12 months – things to try or fix, sensitivity analyses, new data sources, etc.

### *Step 3 - Discussion*

Each review group should summarize key takeaways from the review session to present to the large group (~3 min each). The whole group will spend

### *Step 4 - After the Activity*

# Peer Review Form

*The following questions are meant to guide the review, to facilitate discussion that may lead to model improvement, knowledge sharing, and idea development.*

[Peer review groups](#)

Model/Team: \_\_\_\_\_

Reviewer 1: \_\_\_\_\_

Reviewer 2: \_\_\_\_\_

## Model structure

1. What is the basic model structure?

2. How is the model calibrated?

## Data

1. What types of data are used? For each of the types of data, determine the source, detail any modifications/manipulation done, and how they are applied.

2. Are there data sources you do not have access to that may be beneficial to your model?

3. Are there other data sources you would like to explore the application of?

### **Execution**

1. How will your team execute the model? Identify whether you will be writing or sourcing code, the coding language needed, and experience among your team to develop code for executing the model.

2. How will the model's performance be evaluated? Keep in mind there can be many ways to evaluate a model, which are most appropriate for your project's goal?

## **Communication**

1. What is the structure for communication with public health decision-makers (i.e. types of information shared, frequency, etc.)?
2. How will feedback from public health decision-makers be integrated?

## **Possible hurdles**

1. Are there potential hurdles you imagine might occur as you continue developing the model?

2. What actions can you begin to implement to mitigate these possible issues?

### Tasks Identified

In collaboration between reviewers and the reviewed team, identify a set of tasks that the reviewed team agrees to accomplish in the next **6-12 months**.

**Additional information or ideas gained from the review**

Add any other details on additional insights, ideas, or information that came out of the review here.