Manuscript Number: EPIDEMICS-D-22-00186     
  
  
1. Do the authors explain the reason for writing a review article in this field?  
  
Please provide suggestions to the author(s) on how to better justify their reasons. Please number each suggestion so that the author(s) can more easily respond.

Reviewer #1: 1. Yes, somewhat. The title is overly general and may over-promise what the systematic review is about. From the title, it appears that the systematic review will be quite broad, whereas the outlined aims indicate that the manuscript is more narrowly focused on categorizing modeling papers as to whether they included non-academic authors (and if those that do utilize different modeling approaches). I believe the idea is to highlight that purely academic teams are utilizing different approaches than mixed teams, and this could be because they aren't well enough connected to the practical aspects of outbreak response. However, this could also be because of limitations in model availability (i.e., are mixed teams using more canned "black-box" modeling programs that academic teams).  
  
2. It would also be nice to see if mixed teams produce better outcomes (i.e., more impact on policy), as seems to be suggested by the authors. That being said, I understand that impact on policy is very hard to measure.

2. Does the review article provide a good overview of the development of the field while providing insights on its future development?  
  
Please list the historical developments of likely future scenarios that the author(s) should add or emphasize more. Please number each suggestion so that the author(s) can more easily respond.

Reviewer #1: 3. Overall, I found this review interesting but also thought that the title over-promised the content (as described below). It focuses more on patterns of collaboration and how some modeling practices may differ between mixed and academic collaborations (and between human vaccine-preventable diseases and FMD). However, the review synthesized a number of aspects “modeling practices” that may be more informative for those embarking on modeling projects, such as outcomes measured, which are only briefly touched upon in the paper.

3. Do the authors adequately represent the most relevant and recent advances in the field?  
  
Please provide suggestions to the author(s) on how to improve their reference list to include the relevant topics and cover both historical references and recent developments. Please number each suggestion so that the author(s) can more easily respond.

Reviewer #1: 4. I could not find a list of papers included in the review, so I was unable to assess whether their search terms adequately captured relevant literature.

4. Is the review reported in sufficient detail to allow for its replicability and/or reproducibility (e.g., search strategies disclosed, inclusion criteria and risk of bias assessment for individual studies stated, summary methods specified)?  
  
Please provide suggestions to the author(s) on how to improve the replicability/reproducibility of their review. Please number each suggestion so that the author(s) can more easily respond.

Reviewer #1: 5. Yes

5. Is the statistical summary method (e.g., meta-analysis, meta-regressions) and its reporting (e.g., P-values, 95% CIs, etc.) appropriate and well described?  
  
Please clearly indicate if the review requires additional peer review by a statistician. Kindly provide suggestions to the author(s) on how to improve the statistical analyses, controls, sampling mechanism, or statistical reporting. Please number each suggestion so that the author(s) can more easily respond.

Reviewer #1: 6. N/A. No meta-analysis was performed. Results are purely descriptive in nature.

6. Does the review structure, flow or writing need improving (e.g., the addition of subheadings, shortening of text, reorganization of sections, or moving details from one section to another, following [PRISMA](http://protect-eu.mimecast.com/s/g2TwCx1g4cPGlyQCvhX4h?domain=prisma-statement.org) guidelines)?  
  
Please provide suggestions to authors on how to improve the review structure and flow. Please number each suggestion so that the author(s) can more easily respond.

Reviewer #1: 7. Yes

7. Could the manuscript benefit from language editing?

Reviewer #1: Yes

Reviewer #1: 8. In lines 546,the authors point out an interesting divergence between academic versus mixed collaborations in that mixed collaborations tend to use more complex models. While the authors suggest that this is because the need to model more fine-scale operational aspect of policy, they also state that they "make no value judgements." I am more familiar with the FMD literature, and one reason for more "complex" models utilized by mixed collaborations is that such mixed collaborations sometimes rely on "black-box" models such as Interspread+ and NAADSM that require less coding expertise. I tend to agree with the authors that these are often over-parameterized, and the user may not have a full understanding of the assumptions or how the many different parameters may interact to determine model behavior (let alone do a through sensitivity analysis). I think it would be useful for the authors to be a little bolder about best modeling practices.  
  
9. Similarly, in the following paragraph, the authors write that FMD models are more complex because the nature of FMD spread requires the inclusion of farm structure, connectivity, etc. While that is true, one could equally argue that human diseases are equally complex (complex contact structures within schools, workplaces, etc, and complex patterns of movement), but more simplifying assumptions are made. Would human VPD models benefit from incorporating more complexity, or alternatively, would FMD models benefit from more simplifying assumtpions?  
On a side note, perhaps the need for complexity in FMD models is not due to the nature of FMD, but perhaps the complex nature of the responses (i.e., movement control, depopulations).  
  
10. In line 568, the authors write that most FMD models are not validated with observed data, which is a bit unfair to FMD modelers. In many cases, models are used to simulate outbreaks in regions that are free of the disease as part of preparedness planning, so not validating the model with observed data is not out of laziness or failure to adhere to best modeling practices, but rather a necessary constraint of modeling in those regions.  
  
  
Minor comments:  
11. Abstract: The initial reference to FMD should include that this is a veterinary disease that is also managed through vaccination to provide context for why FMD was chosen for comparison.  
  
12. L587: Change "forth" to "fourth"  
  
13. The introduction should be improved grammatically  
  
Editor comments:  
I think this is an interesting study that looks at an important area to help us understand how collaboration is working in modelling to answer policy questions.  
  
I agree with the reviewer that the title and the content are mismatched. The abstract and highlights focuses on the types of groups and collaborations involved in the modelling- I would suggest retitling with something more specific to this.

Abstract Methods:

“whether at least one author was affiliated to the  
country studied, interventions, and model characteristics” Are the three later parts of the sentence, “country studied etc, interventions and model charateristics” what it is looking to see whether the author is affiliated with? Suggest clarifying. If it is, how is one affiliated with model characteristics? If it is different what characteristics were you assessing?

P2 line 42 ish: “is there a difference between the conclusions 44  
drawn about the impact of interventions, especially, vaccination in comparison with 45  
other non-vaccination interventions during outbreaks?” difference between what?  
“Ebola” appeared for the first time in P4 Line 78 for the first time, suggest justifying it’s inclusion earlier

In the section entitled: “Patterns in FMD..” The beginning says you will not be comparing between the different collaboration types, but then later on there is some. Suggest aligning for consistency.

Lin 466: Suggest “and” instead of “with” as to me these are slightly different points.

Line 470- 499: Though I agree with the majority of the points raised here, I think for the discussion of this paper, this section should be more closely linked to the results of the study. Did you find evidence for any of the points made here in your study or what further studies would be needed? (You discuss some of this in the following paragraph but it would be helpful for it to be more integrated.)  
Minor:

Line 432-434, Suggest rephrasing the latter part of this sentence for clarity

Line 447-448: Suggest adding the comparison number.

Lin 587: Typo , I think should be: “Fourth”