PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	A pre-emptive Oral Cholera Vaccine (OCV) mass vaccination campaign in Cuamba District, Niassa Province, Mozambique: feasibility, vaccination coverage, and delivery costs using CholTool
AUTHORS	Elias Chitio, Jucunú J.; Baltazar, Cynthia; Langa, José Paulo; Baloi, Liliana Dengo; Mboane, Ramos B. J.; Manuel, José Alberto; Assane, Sadate; Omar, Alide; Manso, Mariana; Capitine, Igor; Van Rensburg, Craig; Luiz, Naira; Mogasale, Vittal; Marks, Florian; Beck, Namseon; Park, Se Eun

VERSION 1 – REVIEW

REVIEWER	Ray, Arindam Bill and Melinda Gates Foundation India
REVIEW RETURNED	27-Aug-2021

GENERAL COMMENTS	I commend the authors to enrich the OCV vaccination evidence base with such granular datasets from a resource-constrained setting. I like to put forward a couple of suggestions for their kind consideration: 1. The sample size calculation may be explained 2. Detailing on the selection of the households by the surveyor after the random start, may be noted to rule out possibilities of "pocketing", otherwise it may be mentioned in the limitations 3. There could be bivariate tabulation of coverage by the broader set of background characteristics beyond age & sex. Multivariate regression (logistic) could be used to tease out the significant determinants of coverage 4. Digging deeper into the gender differential between males & females may tell an interesting story. Though individually on both first & second dose, the vaccinated proportion among females is lower than that of males, on full vaccination rate they are higher than males. This may indicate that among females, repeat vaccination is higher, while there is high drop-out among male 1st dose recipients. 5. Reasons for non-vaccination could be discussed with analysis of demand-side reasons as well. There are 7 categories of reasons, which may point to the underlying hesitancy and inadequate efforts of HCWs to counsel the people. If megaphone is found to be the most effective communication channel, there might be some gaps in inter-personal communication & mobilization 6. The difference in admin & survey coverage is explained by way of difference in the denominator. Presenting some actual data points on this could highlight this aspect better. 7. It's not clear from costing discussion, whether AEFI surveillance & management (including AEFI training, AEFI kits, AEFI referral transport provision, etc.) are considered in delivery cost 8. High economic cost may be a pointer to think about synergies

	among campaigns and delivery of multiple products at booths or on house visits, to economize provider time/ efforts as well as incentivize beneficiaries for greater uptake.

REVIEWER	Lee, Elizabeth Johns Hopkins University
REVIEW RETURNED	31-Aug-2021

GENERAL COMMENTS	The goal of this study is to evaluate the coverage and costs of a pre-emptive oral cholera vaccination (OCV) campaign that was implemented in the rural, cholera-endemic setting of Cuamba District, Mozambique in August 2018. My main concern with the manuscript draft is that it lacks many details related to the community coverage survey that was conducted. I've highlighted a number of questions I had related to these methods in my review below. Major comments: Was the same implementation strategy deployed in first and second rounds? How were mobile teams deployed? What kinds of healthcare facilities were chosen for the fixed posts? The manuscript should include substantially more detail about how the community vaccine coverage surveys were conducted. For example, where and when were interview teams deployed and how were households chosen? How did they recruit interviewees? How was vaccination status assessed (e.g., head-of-household response, review of vaccination cards)? What is meant by first and second phase of the coverage survey (line 181) – daily monitoring vs final survey after 2nd round campaign? Line 192 Why are they projecting daily coverages into final day coverage? Isn't there a separate final coverage survey? At what spatial scale did this linear projection take place? This method seems strange to me so any further justification about the purpose and decision behind this procedure would be helpful. Will the authors include a survey protocol (to see the wording of the relevant survey questions) with their publication? I think this could help with the interpretation of several of the results sections (Source of Information and Acceptability, Reasons for not being vaccinated). Is the data reported on "Source of Information" (section starting line 239) reporting respondent results only for individuals that got vaccinated? Or is this question also completed by individuals who were aware of the campaign and chose not to get vaccinated? Will the authors provide a supplementary file describing the model inputs that went into the CholTool model or a copy of their CholTool spreadsheet? The study limitations seem quite focused on limitations to campaign implementation. I would encourage the authors to consider limitations to their sampling strategy or quantitative methods in this next revision.

	Minor comments: Line 117 “was” → “were” Line 112 “were” → “was”

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Dr. Arindam Ray, Bill and Melinda Gates Foundation India

Comments to the Author:

I commend the authors to enrich the OCV vaccination evidence base with such granular datasets from a resource-constrained setting. I like to put forward a couple of suggestions for their kind consideration:

1. The sample size calculation may be explained

Our response: In order to estimate the final vaccine coverage rate with reasonable precision, minimum sample size of households was calculated based on the confidence level of 95%, assuming 80% coverage and a design effect of 2. The households were selected using a two-stage cluster random sampling methodology. This has been further elaborated in the revised manuscript.

2. Detailing on the selection of the households by the surveyor after the random start, may be noted to rule out possibilities of "pocketing", otherwise it may be mentioned in the limitations

Our response: The surveyors identified the center point and boundary of the survey target areas and applied random selection of households. Detail has been added in the manuscript.

3. There could be bivariate tabulation of coverage by the broader set of background characteristics beyond age & sex. Multivariate regression (logistic) could be used to tease out the significant determinants of coverage

Our response: For this manuscript publication, we have not conducted any multivariate regression.

4. Digging deeper into the gender differential between males & females may tell an interesting story. Though individually on both first & second dose, the vaccinated proportion among females is lower than that of males, on full vaccination rate they are higher than males. This may indicate that among females, repeat vaccination is higher, while there is high drop-out among male 1st dose recipients.

Our response: Thank you for this feedback. This is further elaborated in the result section.

5. Reasons for non-vaccination could be discussed with analysis of demand-side reasons as well. There are 7 categories of reasons, which may point to the underlying hesitancy and inadequate efforts of HCWs to counsel the people. If megaphone is found to be the most effective communication channel, there might be some gaps in inter-personal communication & mobilization

Our response: This is added for further elaboration in the discussion section.

6. The difference in admin & survey coverage is explained by way of difference in the denominator. Presenting some actual data points on this could highlight this aspect better.

Our response: The administrative coverage data is presented in Table 1.

7. It's not clear from costing discussion, whether AEFI surveillance & management (including AEFI training, AEFI kits, AEFI referral transport provision, etc.) are considered in delivery cost

Our response: The AEFI management was included in the general OCV microplanning, training, and execution associated costs in the CholTool. The relevant sentence has been revised.

8. High economic cost may be a pointer to think about synergies among campaigns and delivery of multiple products at booths or on house visits, to economize provider time/ efforts as well as incentivize beneficiaries for greater uptake.

Our response: Thank you for this comment. This is added in the discussion.

Reviewer: 2
Dr. Elizabeth Lee, Johns Hopkins University
Comments to the Author:
See attached file

Reply to editors' inputs
• The goal of this study is to evaluate the coverage and costs of a pre-emptive oral cholera vaccination (OCV) campaign that was implemented in the rural, cholera-endemic setting of Cuamba District, Mozambique in August 2018. My main concern with the manuscript draft isthat it lacks many details related to the community coverage survey that was conducted. I've highlighted a number of questions I had related to these methods in my review below.

Major comments:
• Was the same implementation strategy deployed in first and second rounds?

Our response: The same implementation strategy was deployed for both rounds. This is clarified in the relevant sentence.

• How were mobile teams deployed? What kinds of healthcare facilities were chosen for the fixed posts?

Our response: Mobile teams were deployed to households remotely located, geographically far from vaccination fixed posts (e.g., healthcare facilities). Healthcare facilities chosen for the fixed posts were the existing healthcare facilities located in the vaccination target area including primary health centers and secondary and referral hospital. This is further explained in the methods.

• The manuscript should include substantially more detail about how the community vaccine coverage surveys were conducted. For example, where and when were interview teams deployed and how were households chosen? How did they recruit interviewees? How was vaccination status assessed (e.g., head-of-household response, review of vaccination cards)?

Our response: The manuscript has been revised with more details on the coverage survey.

• What is meant by first and second phase of the coverage survey (line 181) – daily monitoring vs final survey after 2nd round campaign?

Our response: The relevant sentences have been revised to further clarify.

• Line 192 Why are they projecting daily coverages into final day coverage? Isn't there a separate final coverage survey? At what spatial scale did this linear projection take place? This method seems strange to me so any further justification about the purpose and decision behind this procedure would be helpful.

Our response: The methods on coverage estimates have been further clarified in the revised manuscript. The alternative method of converting daily usage of doses to estimate coverages will be explored in a separate paper, e.g., with the data of the daily vaccine coverage and cumulative vaccine consumption for each day, the final vaccination coverage is estimated using 'measurement error approach' on assumption that the vaccine coverage rate is linearly correlated with the cumulative number of vaccine consumption.

• Will the authors include a survey protocol (to see the wording of the relevant survey questions) with their publication? I think this could help with the interpretation of several of the results sections (Source of Information and Acceptability, Reasons for not being vaccinated).

Our response: The coverage survey questionnaire will not be attached to this manuscript as all information is already on Tables 2 and 3.

• Is the data reported on "Source of Information" (section starting line 239) reporting respondent results only for individuals that got vaccinated? Or is this question also completed by individuals who were aware of the campaign and chose not to get vaccinated?

Our response: The data reported on 'source of information' reports for all respondents regardless of their vaccination status.

• Will the authors provide a supplementary file describing the model inputs that went into the CholTool model or a copy of their CholTool spreadsheet?

Our response: We did not plan to share the CholTool spreadsheet containing costs as it may contain locally sensitive information such as salary. However, detailed descriptions of CholTool including a spreadsheet and user manual are available in reference 9 quoted in the manuscript "Morgan, W. et al. (2020). Costing oral cholera vaccine delivery using a generic oral cholera vaccine delivery planning and costing tool (CholTool). Human Vaccines and Immunotherapeutics. 16(12), pp.3111-3118".

• The study limitations seem quite focused on limitations to campaign implementation. I would encourage the authors to consider limitations to their sampling strategy or quantitative methods in this next revision.

Our response: Thank you for your feedback. As we have revised the method section on sampling, we believe this issue is resolved.

Minor comments:
• Line 117 "was" -> "were"

Our response: Edited.

• Line 112 "were" -> "was"

Our response: Edited.

VERSION 2 – REVIEW

REVIEWER	Ray, Arindam Bill and Melinda Gates Foundation India
REVIEW RETURNED	08-Mar-2022

GENERAL COMMENTS	Thanks for revising the manuscript as per earlier feedback.

VERSION 2 – AUTHOR RESPONSE

Reviewer: 1
Dr. Arindam Ray, Bill and Melinda Gates Foundation India
Comments to the Author:
Thanks for revising the manuscript as per earlier feedback.

Our response: Thank you for your valuable feedback once again.