# Peer Review Report

## PART 1: Comments

1. Importance of this manuscript for the scientific community:  
This manuscript provides a comprehensive mathematical modeling framework to analyze cholera progression dynamics and evaluate the effectiveness of intervention strategies. It adds significant value by integrating disease compartments (symptomatic, asymptomatic, hospitalized, etc.) and environmental factors (contamination, disinfection). The sensitivity analysis and simulation results offer insights that can guide public health interventions. The model’s applicability, especially to resource-limited settings, makes this study valuable for disease control policy formulation.

2. Is the title of the article suitable?  
Yes, the title is suitable. However, it can be slightly refined for clarity:  
Suggested Title: Mathematical Modelling and Analysis of Cholera Epidemic with Disease Progression Dynamics and Control Strategies

3. Is the abstract of the article comprehensive?  
The abstract is fairly comprehensive, but it could benefit from clearer articulation. Some technical terms such as “next-generation matrix,” “DFE,” and “DOTS” could be defined briefly. Suggest rephrasing long sentences for readability and moving key findings upfront.

4. Is the manuscript scientifically correct?  
Yes, the manuscript is scientifically sound and methodologically robust. The model is mathematically well-formulated, with proper assumptions, equilibrium analysis, and use of the next-generation matrix. Theorems on stability are logically structured, and simulations support theoretical findings. However, clarity in explanation and consistency in notation need improvement in some sections.

5. Are the references sufficient and recent?  
Mostly yes. The manuscript includes a good number of recent references, especially from 2020–2024. However, some references (e.g., World Health Organization citations) should be cited with URLs or DOIs when available. More literature on intervention modeling and stochastic modeling could further enrich the background.

6. Is the language/English quality of the article suitable for scholarly communications?  
The article needs moderate language editing. While the scientific content is clear, the manuscript contains grammatical errors, awkward phrasing, and inconsistent formatting. A thorough proofreading by a native or professional editor is recommended.

7. Optional/General Comments:  
- Figures are informative, but some captions lack sufficient detail.  
- Ensure all parameters are defined in one place.  
- Ensure consistency in symbols and notation throughout.  
- Proper formatting of mathematical expressions is needed.

## PART 2: Ethical and Competing Interest Issues

Are there ethical issues in this manuscript?  
None detected. The manuscript is a mathematical modeling study and does not involve human or animal subjects.

Are there competing interest issues in this manuscript?  
None observed.

If plagiarism is suspected, please provide related proofs or web links.  
No plagiarism is detected based on a preliminary manual check.

## PART 3: Declaration of Competing Interest of the Reviewer

I declare that I have no competing interest as a reviewer.

## PART 4: Objective Evaluation

Overall Marks: 8.2 / 10

Recommendation: Minor Revision

The manuscript is of high scientific quality and addresses an important issue using a sound mathematical framework. With minor improvements in language, formatting, and clarity, it will be suitable for publication.

## Reviewer Details:

Name of the Reviewer: [Your Name]

Department of Reviewer: [Your Department]

University or Institution of Reviewer: [Your Institution]

Country of Reviewer: [Your Country]

Position: [e.g., Professor / Lecturer]

Email ID of Reviewer: [Your Email]

WhatsApp Number (Optional): [Optional]

5-8 Keywords regarding expertise of Reviewer:  
Mathematical Modelling, Infectious Diseases, Epidemiology, Public Health Policy, Compartmental Models, Sensitivity Analysis, Dynamical Systems, Differential Equations