2022-2023 Harvard/University of Global Health Equity
Mathematical Modeling for Infectious Disease Planning
Review of articles on modeling interventions

1 hour 30 minutes (1 hour for teamwork, 30 minutes for group discussion)

In this activity, each team will review the methods and results of three studies to compare the interventions assessed by the authors. This activity aims to guide trainees in appreciating the different mathematical modeling approaches in answering similar research questions.

Please note that you are not required to read the whole article, just the parts of the methods and results that describe the interventions and results in the shared document.

The studies to be reviewed are:

A: Akinwande, N. I., Ashezua, T. T., Gweryina, R. I., Somma, S. A., Oguntolu, F. A., Usman, A., ... & Shehu, M. D. (2022). Mathematical model of COVID-19 transmission dynamics incorporating booster vaccine program and environmental contamination. Heliyon, 8(11).

B: Ofori, S. K., Schwind, J. S., Sullivan, K. L., Chowell, G., Cowling, B. J., & Fung, I. C. H. (2023). Age-Stratified Model to Assess Health Outcomes of COVID-19 Vaccination Strategies, Ghana. Emerging Infectious Diseases, 29(2), 360.

C: Kinyili, M., Munyakazi, J. B., & Mukhtar, A. Y. (2022). To use face masks or not after COVID-19 vaccination? An impact analysis using mathematical modeling. Frontiers in Applied Mathematics and Statistics, 8, 872284.

Q1. Complete the table below to compare the above studies, given what is provided:

Study	**A**	**B**	**C**
What intervention(s) was modeled?			
How were the intervention (s) modeled?			
What were the main findings of the authors? How are these presented?			
Did the authors report outcomes that reflect uncertainties in either the level of the interventions or in parameters?			

Q2. Which of these styles of results do you like the most? Which do you like the least? Which are most similar to your studies? What will be most feasible to implement in BM?