2023 Harvard/University of Global Health Equity
Mathematical Modeling for Infectious Disease Planning

Health outcomes for your project

Time: 1 hour

In this activity, you will extend your model to include the health outcomes you would like to assess for your project.

1. List up to four outcomes for the disease in your project, given the natural history and transmission dynamics.
2. From your examples in question 1, which of these outcomes are you interested in modeling for your projects?
3. Briefly explain your choice of outcome(s).
4. How does the outcome(s) change the structure of your model ?
5. Redraw your compartmental models to include the outcome(s) you identified.
6. What new parameters are needed to capture the transition of individuals into the compartments with your outcome(s)?
7. Write down the differential equations for your updated compartmental diagram.
8. Bonus: Identify 2-4 interventions that are used to control your disease of interest and describe how the interventions affect the structure of your model.