1. Motivation and Objectives

Why Agent-Based Modeling?

- Benefits of ABM in disease modeling:
  - Ability to capture emergent behavior based on agent interactions
  - Bottom-up approach that results in chaotic system from sub-system interactions
  - Suitable for modeling interdependent, large, and networked interactions among agents
  - Ability to model individual and aggregate level details of agents

An agent and its elements

Theories

- Game theory: Modeling strategic interaction between two or more players in a situation containing set rules and outcomes
- Decision making theory: Governs how rational individuals should behave under risk and uncertainty. Agents make decisions during their interactions

2. Quantitative Research Methods

Agent-Based Model and Simulation

Dengue agent-based model

Flow chart diagram for dengue transmission between humans and mosquito vector

3. Preliminary Results

Prisma Diagram showing results from four databases search on agent-based modeling for arboviruses and climatic factors

References: