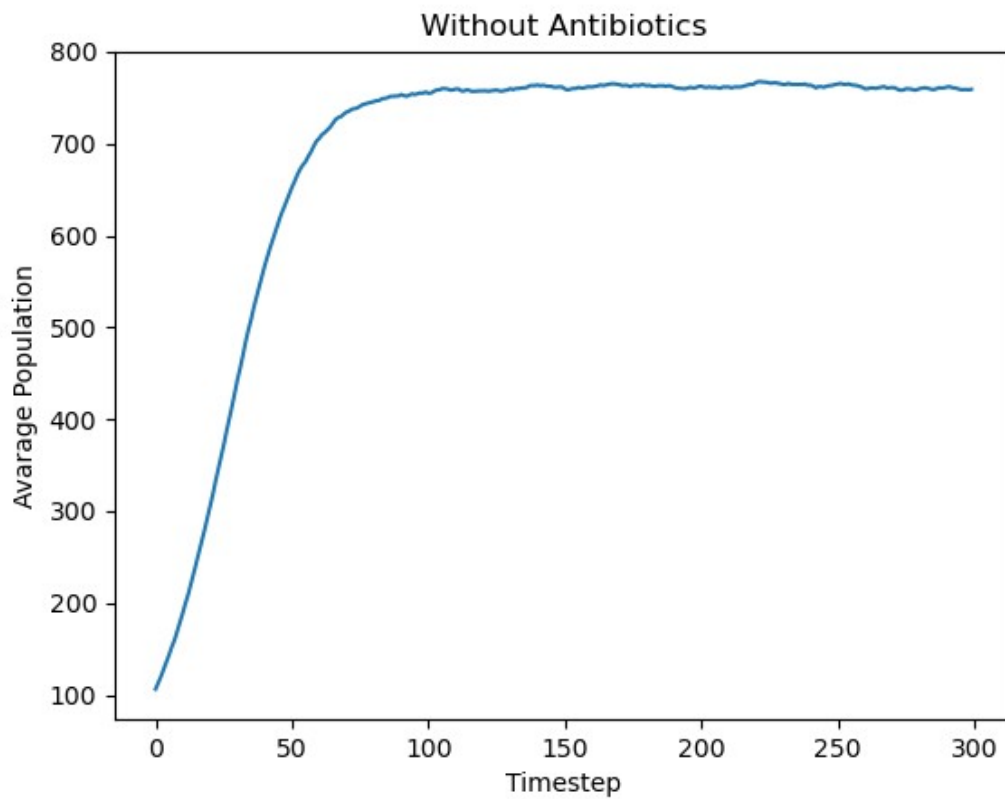


Student: Hayk Stepanyan
Created on July 6, 2020

Simulation 1: Without Antibiotics

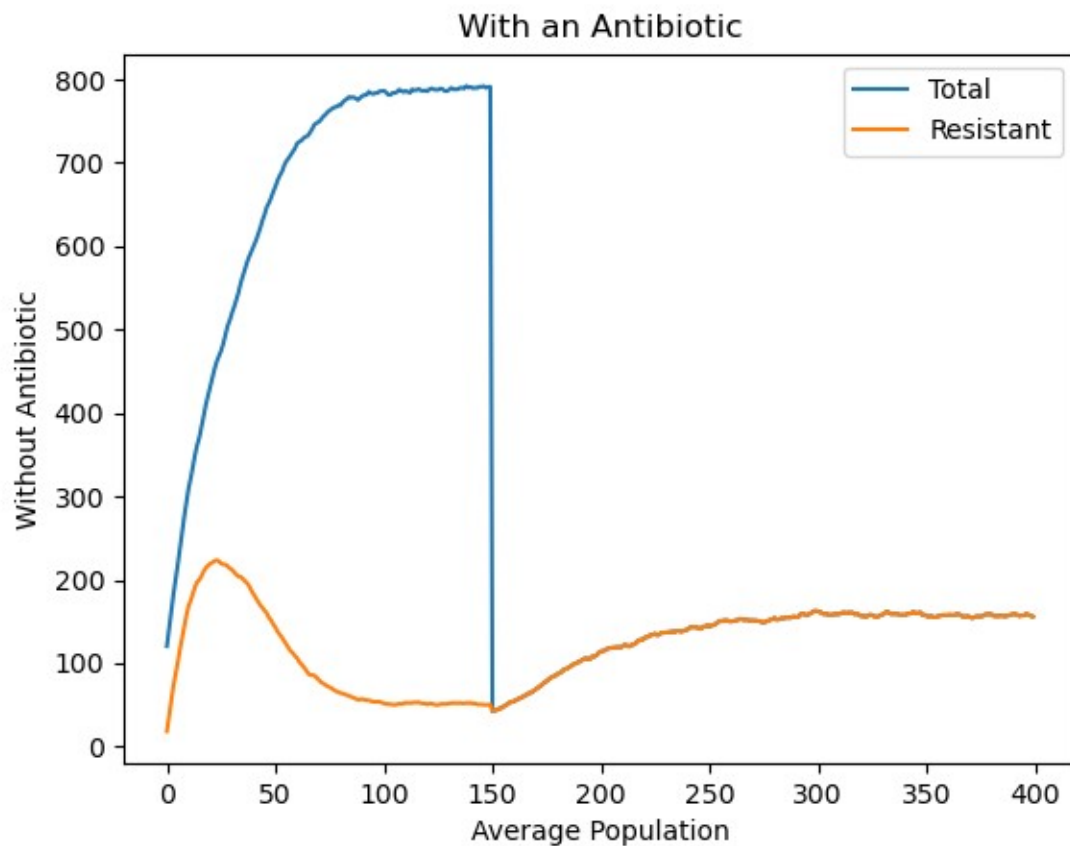
Graph



95% confidence interval for the population estimate at time step 299:

From: 755.3599682376558 to: 763.1200317623442

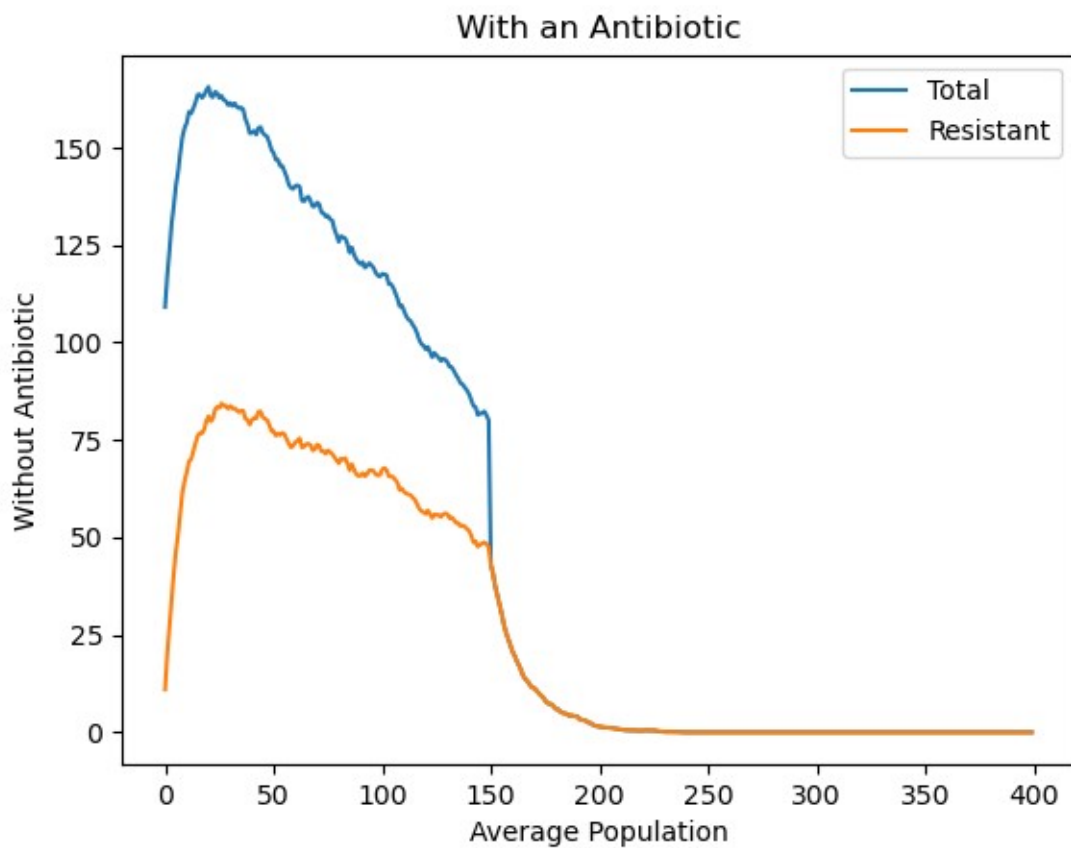
Simulation A: With Antibiotics



95% confidence interval for the total population estimate at time step 299:
From: 151.6992686500033 to: 173.8207313499967

95% confidence interval for the resistant population estimate at time step 299:
From: 151.6992686500033 to: 173.8207313499967

Simulation B: With Antibiotics



95% confidence interval for the total population estimate at time step 299:
From: 0.0 to: 0.0

95% confidence interval for the total population estimate at time step 299:
From: 0.0 to: 0.0

Trends of Simulation A and Simulation B

1. What happens to the total population before introducing the antibiotic?
Simulation A: Increases linearly then logarithmically
Simulation B: Increases then decreases
2. What happens to the resistant bacteria population before introducing the antibiotic?
Simulation A: Increases then decreases
Simulation B: Increases then decreases
3. What happens to the total population after introducing the antibiotic?
Simulation A: Significantly decreases and then increases
Simulation B: Significantly decreases
4. What happens to the resistant bacteria population after introducing the antibiotic?
Simulation A: Increases
Simulation B: Decreases