Problem Set 2

Q1. Implement a stochastic SEIR model in R with an initial population of 500 people. What are your parameters? Paste your code for that model below.

Q2. Run that model 10 times. What was the minimum size of the epidemic? What was the maximum? What was the median? Plot your results.

Q3. Change the initial population to 50 people, and run that model 10 times. What was the minimum size of the epidemic? What was the maximum? What was the median? Plot your results. Discuss how this differs from your results for Q2, and why.

Q4. Run your 50 person model 250 times. What sort of variability do you see in the size and timing of the epidemic? Plot your results. Change one parameter in your model and repeat this simulation – how do your answers change?

Q4 Extra Credit: Compare these differences statistically.