

CT561: Systems Modelling & Simulation

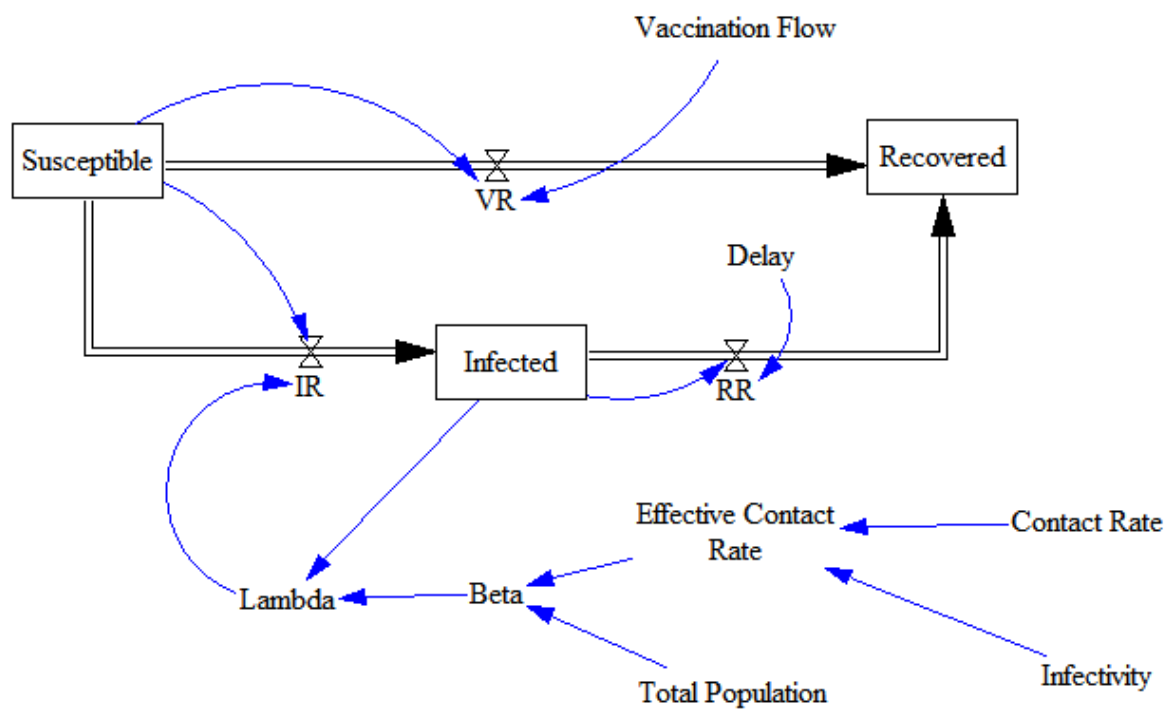
Assignment 2

Caroline Richardson

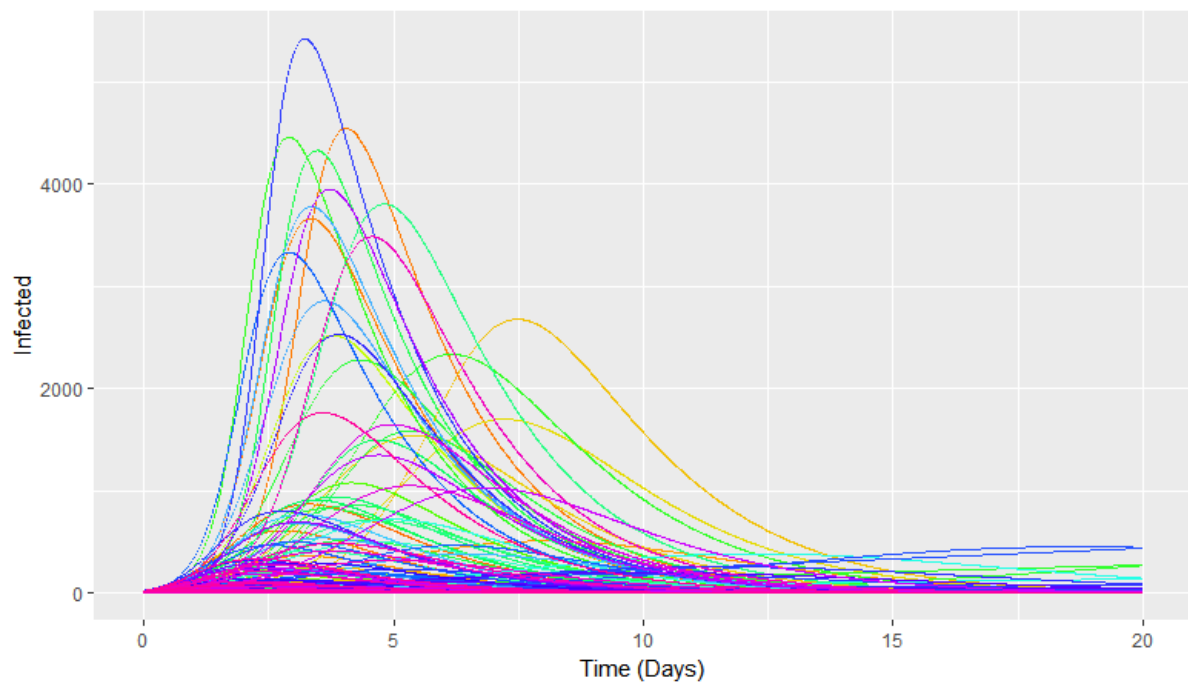
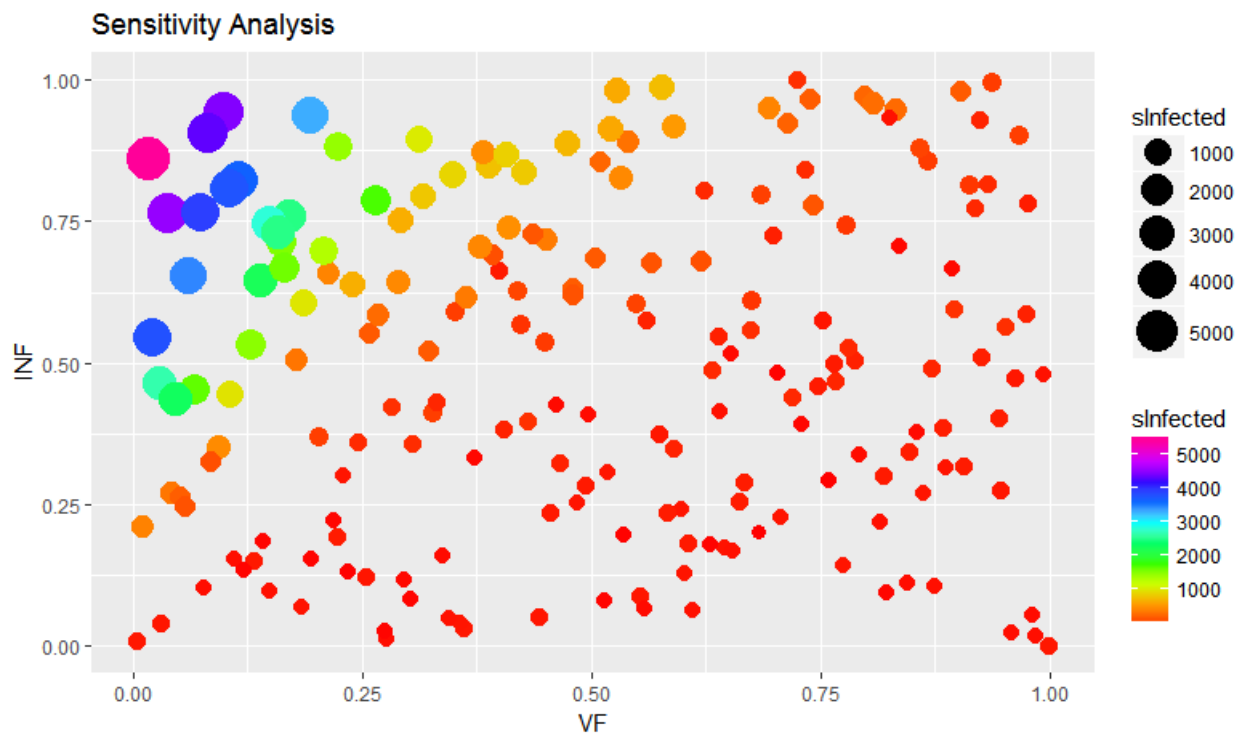
13358846

4BCT

Vensim Model:



Graph for 200 simulations:



Data Check: First 10

sInfected	VaccFraction	Infectivity
24.500516	0.361404859	0.033303773
30.314068	0.905870941	0.317641797
61.094769	0.245851122	0.361587469
44.231923	0.922802718	0.928839277
56.223090	0.632144003	0.487631542
38.195783	0.786945934	0.503661509
36.882682	0.639218532	0.546538329
7.852881	0.296043954	0.117020866
19.663710	0.517547124	0.306022012
25.002103	0.131974827	0.149928165

Comments on the Results:

- Over time the number of infected tends downwards due more of the susceptible stock being vaccinated and flowing to recovered stock
- Most noticeable at the 0.25 Vaccination Fraction point on the graph, to the right from this all sInfected less than 3000.
- Due to the population being a set number of 10000, once those who are susceptible have been infected and recovered or vaccinated, then the total number who can become infected reduces.
- Time wise, after 7.5 days(roughly), infected numbers are considerably lower and begin to settle down to lowest point
- The second graph shows where the behaviour is mostly concentrated, which is the 0 – 5 days range
- Peak occurs around the 4 day mark
- This shows the Latin hypercube sampling applied to the SIR model