SEIR Monte Carlo model

Interactively change by pressing the blue 'apply' button.

This model is intended to give a feeling how bad an epidemic can get if we "do nothing", meaning R0 stays constant with time. Many parameters have a range of uncertainty, therefore every parameter have an average value and a +/- range, and the Monte Carlo chooses a value in this range, uniformly distributed over the range. This models the basic compartments of Susceptible, Exposed, Infected, Critical, Dead and Recovered. Only the non-immuned population can get exposed. Infected can either become Critical (needing ICU) or Recovered. Critical can become Dead or Recovered.
Note: Looping over many Monte Carlo rounds improves the noise but takes longer. 200 rounds were good for the median graphs, 1000 were needed for good histograms.

Apply

Number of Monte Carlo loops
1000

Population
100000

Initial exposed Cases
10

% of population immuned
20

+/- % of population immuned
5

R0
1.5

+/- R0
0.6

Incubation time [days]
2.5

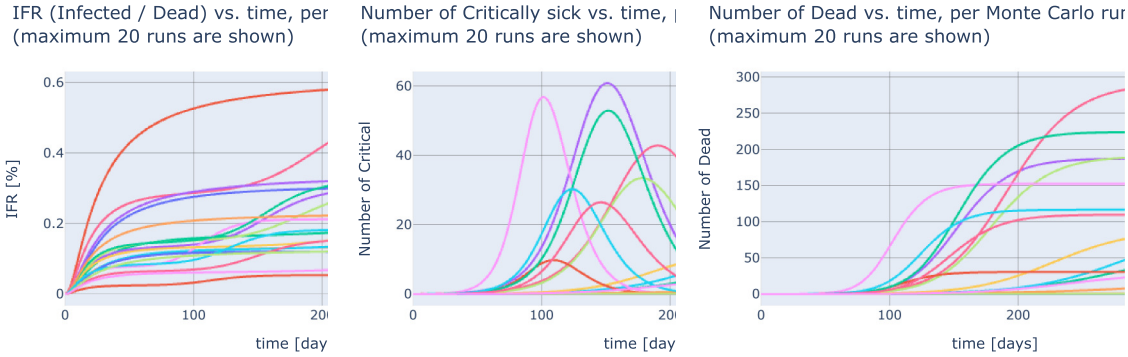
+/- incubation time [days]
1.5

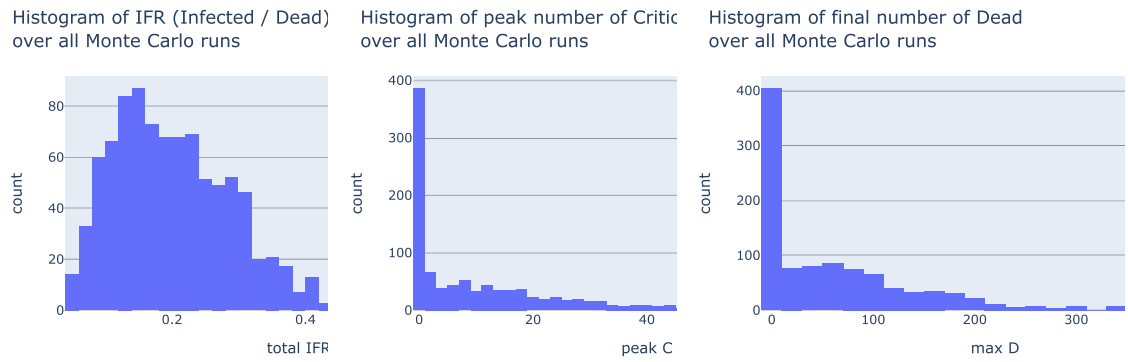
Infectious time [days]
6.5

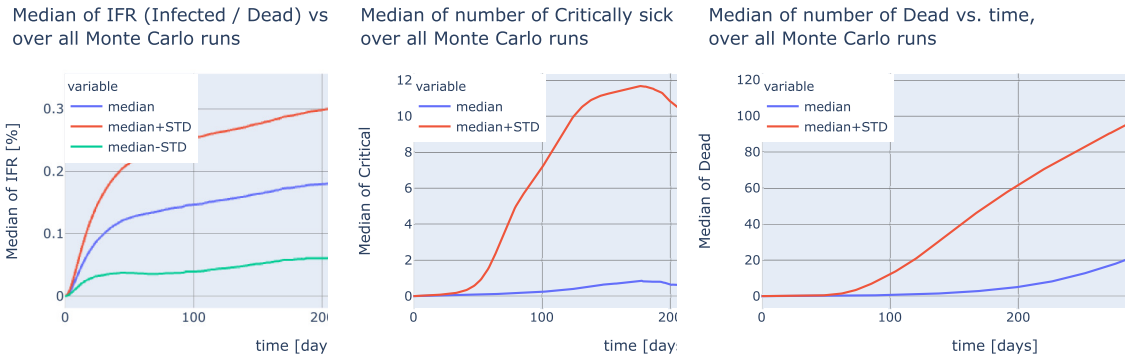
+/- infectious time [days]
3.5

Probability: infected need ICU [%]
0.5

+/- probability: infected need ICU [%]
0.25







Probability: Dying in ICU [%]

40.5

+/- probability: Dying in ICU [%]

7.5

Time: infectious to ICU [days]

8.5

+/- time: infectious to ICU [days]

4

Time to die in ICU [days]

7

+/- time to die in ICU [days]

2

Time to recover in ICU [days]

14

+/- time to recover in ICU [days]

2