Problems faced during the project work:

1. In previous assignment, there were more auxiliary variables and less number of stocks and flows.

In this week’s assignment, we have introduced new stocks, such as ICU cases, hospitalized etc and flows like ICU recovery rate, Hospital recovery rate etc.

1. During the simulation, some of the stocks were giving error of floating-point overflow.

According to our understanding, this was due the fact that at some point the variable which was in denominator was becoming zero.

To tackle this, instead of dividing by total population, we are dividing the term by MAX (Total Population, 1)).

1. Initially, we considered Transmission rate as 0.0001 which made the data fluctuate at exponential rate.

We then changed the transmission rate to (1e-7) and introduced effective transmission rate which also consider infected patients’ stock and population to calculate effective transmission rate.

1. In vaccine supply, we wanted to include the vaccination funding and vaccination rate as the factors influencing the vaccine supply, but we are yet to figure out how to include vaccination rate in our formula, as vaccination rate is a flow between Susceptible population and recovered population.
2. In our model, stocks like Infected population, recovered cases all are going less than zero, and then increasing exponentially.
3. We are still yet to figure out how public awareness can reduce infection rate and increase recovery rate.
4. The calculation of total population using Susceptible, Infected and recovered population is not correct as per our understanding, as the trend shown are very different from expected.
5. The flow named as Vaccination rate is giving us very hard time as it is influenced by a lot of variables and it also effects a lot of variables, hence we are still not able to correctly provide Vaccination rate with correct equations.
6. We also have Government Funding stock, in which we are taking a constant value and not dynamic variable which depends on some factors. We will try to include some other factors also, which could influence government funding in real time. For example, if cases are increasing, government funding should also increase as per the need.
7. We are yet to find a good relation between total population, infected population, susceptible and recovered population, which is very necessary as total population is used to calculate different variables.