: we can estimate from N(t) - everything

: We can take an estimated incubation period and estimate this.

: number of infected populations

: number of quarantine population from data directly

: Estimate from I(t) as a function of mobility data.

: From data directly.

Parameters:

should be available for a population

disease transmission rate due to infected population, estimate this.

the government effort/ self-isolation index, manual based on news on the region. It should ideally increase with, increase in death / infected people. A baseline will be set based on news. It will decrease due to economic burden. Make a function here.

natural death rate, is death rate due to disease and is the recovery rate, should be available.

the rate at which an individual leaves the exposed class and becomes infective i.e.,

is the latency period.

the rate at which infected individuals are made quarantine, i.e., is the number of infected persons which are expected to be kept in quarantine. Out of this, are made quarantine and persons did not follow the quarantine rule due to negligence or their unwanted behavior and they are travelling from one place to another, and thus they become disease carrier, where Ideally should be a function of mobility but we can estimate this also.

disease transmission rate due to carriers due to which some persons are exposed to infection and some persons ) remain as a disease carrier, where

and are the natural recovery rate of infected and carrier individuals, is the recovery rate of quarantine individuals due to natural factors as well as medical effort. Should also be available. A function of age of people affected, whether they in a natural recovery or hospitalized etc.

death rate due to covid-19. Should be available. Estimate on this age, and should be 1- .

Exposed – asymptomatic

Infected - Symptomatic and hospital quarantined (seeking treatment)

Quarantined – Home Quarantined

Carriers – Quarantined \* mobility change (not infected because they are seeking treatment)