Modeling COVID-19 epidemic in Iran

To forecast the epidemic trend in Iran, a set of dynamic models were created. In these models, the effect of climate and community behavior change on the reproductive number is modeled. A baseline scenario is also defined as letting the epidemic grow naturally, with no prevention/control interventions. Different levels of intervention are also defined based on the extent of population isolation. Outcomes of each scenario on the number of infected cases are computed.

Modeling results show that if effective isolation occurs in 10% of the population, 2,400,000 individuals will be infected with COVID-19 in Iran. For an isolation rate of 25%, started since March 10, 2020, the first wave of the epidemic will last till mid-May. In this scenario, 1,160,000 individuals will be infected in Iran by mid-May. If preventive efforts can reach a 32% effective isolation rate, a considerable decrease in the number of new cases would be expected during April and May, and the total number of infected cases would decrease to 951,000.

If the isolation rate increases to 40%, a dramatic decrease in the number of newly infected cases would be expected to start late in March. Total number of infected individuals in this scenario is expected to be 811,000 individuals.

This serious health issue requires long-term planning and arrangements. But for short term control of the epidemic, social distancing, and identification and isolation of suspected and confirmed cases are believed to be the most important and effective control measure.

For further details on the methodology and results of these models, please visit:

Geographical distribution of confirmed COVID-19 cases in Iran

* Day one of the epidemic is considered as January 21, 2020.