

Singapore designs computer model to reduce COVID-19 infections and deaths

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The main goal of the study is to aid health authorities to make data-driven decisions in fighting the global COVID-19 pandemic

A team of scientists from Nanyang Technological University, Singapore (NTU Singapore) has developed a predictive computer model that, when tested on real pandemic data, proposed strategies that would have reduced the rate of both COVID-19 infections and deaths by an average of 72 per cent, based on a sample from four countries.

The model, called NSGA-II, could be used to alert local governments in advance on possible surges in COVID-19 infections and mortalities, allowing them time to put forward relevant counter measures more rapidly.

Through the testing of NSGA-II in four Asian countries using data available from 1 January 2020 to 31 December 2020, the team demonstrated that it could have helped reduce the number of COVID-19 infections and deaths by up to 76 per cent in Japan, 65 per cent in South Korea, 59 per cent in Pakistan, and 89 per cent in Nepal.

The computer model achieved the result by recommending timely and country-specific advice on the optimal application and duration of COVID-19 interventions, such as home quarantines, social distancing measures, and personal protective measures that would help to thwart the negative impact of the pandemic.

The team is hoping to work with regional partners who will benefit from the predictive programme.