

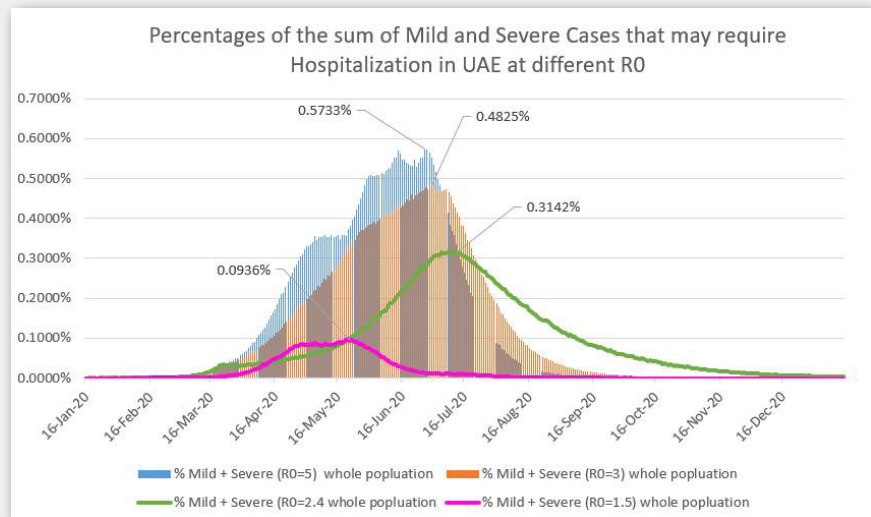
COVID-19 RESEARCH NEWSLETTER

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Measuring the impact of mitigation strategies for COVID-19 pandemic in the UAE: a data modeling approach

Since the first case of COVID-19 pandemic was reported in the UAE on 16 January 2020, the number of cases identified daily continue to increase. Estimating the number of future COVID-19 cases is a crucial task for authorities in the UAE. In this study, the research team introduced a compartmental simulation model to estimate the different range of cases across various mitigation and non-mitigation strategies in the UAE.

They extended the Susceptible-Exposed-Infected-Recovered (SEIR) model into seven compartments (Susceptible, Exposed, Infected-Pre-Asymptomatic, Infected-Asymptomatic, Infected-Symptomatic-Mild, Infected-Symptomatic-Severe, and Recovered) to estimate the future cases in the UAE. The model was developed using the GLEAMviz client simulator and the parameters were customized for the UAE including, among others, the contact rate and the reproduction rate (R_0) at different mitigation strategies. The 95% confidence interval (CI) for the mean/1000 cases was fit within the lower 95%CI and upper 95%CI. The team identified that $R_0=1.5$ is the best mitigation strategy for the UAE to follow in COVID-19 pandemic, despite the fact that this will increase the lifetime of the disease in the country. However, this will result in minimum economical cost, sustainable healthcare sector in the UAE as well as save people's lives. Further, at $R_0=5$, there is a projection that on 14 June 2020, the number of patients requiring some form of treatment will be significantly high compared to the total population, as shown in the figure. The study aims to provide future forecasting estimations about the spread of COVID-19 in the UAE, considering different scenarios, by incorporating non-pharmaceutical interventions.



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If you are interested in sharing your COVID-19 related research, please send your contribution to research.office@uaeu.ac.ae