ADRIANA-STEFANIA CIUPEANU,

Dynamics of Variants of Concern

Abstract: The COVID-19 pandemic has seen multiple waves, in part due to the implementation and relaxation of social distancing measures by the public health authorities around the world, and also caused by the emergence of new variants of concern (VOCs) of the SARS-Cov-2 virus. Using mathematical modelling tools, we investigated the dynamics of VOCs with the objective of understanding key factors that determine the dominance and coexistence of VOCs. Our results show that the transmissibility advantage of a new VOC is a main factor for it to become dominant. Additionally, our modelling study indicates that the initial number of people infected with the new VOC plays an important role in determining the size of the epidemic. Furthermore, public health measures targeting the newly emerging VOC taken in the early phase of its spread can limit the size of the epidemic caused by the new VOC. This is joint work with Marie Varughese, Weston Roda, Donglin Han, Qun Cheng, Michael Y. Li