Monitoring the impact of Movement Control Order (MCO) in flattening the cummulative daily cases curve of Covid-19 in Malaysia: a generalized logistic growth modeling approach

ABSTRACT

Introduction: COVID-19 has affected almost every country in the world, which causing many negative implications in terms of education, economy and mental health. Worryingly, the trend of second or third wave of the pandemic has been noted in multiple regions despite early success of flattening the curve, such as in the case of Malaysia, postSabah state election in September 2020. Hence, it is imperative to predict ongoing trend of COVID-19 to assist crucial policymaking in curbing the transmission.Method: Generalized logistic growth modelling (GLM) approach was adopted to make prediction of growth of cases according to each state in Malaysia. The data was obtained from official Ministry of Health Malaysia daily report, starting from 26 September 2020 until 1 January 2021.Result: Sabah, Johor, Selangor and Kuala Lumpur are predicted to exceed 10,000 cumulative cases by 2 February 2021. Nationally, the growth factor has been shown to range between 0.25 to a peak of 3.1 throughout the current Movement Control Order (MCO). The growth factor range for Sabah ranged from 1.00 to 1.25, while Selangor, the state which has the highest case, has a mean growth factor ranging from 1.22 to 1.52. The highest growth rates reported were in WP Labuan for the time periods of 22 Nov - 5 Dec 2020 with growth rates of 4.77. States with higher population densities were predicted to have higher cases of COVID-19. Conclusion: GLM is helpful to provide governments and policymakers with accurate and helpful forecasts on magnitude of epidemic and peak time. This forecast could assist government in devising short- and long-term plan to tackle the ongoing pandemic.