Paper Title\* (A Review of Mathematical Modeling in the Pandemic Age)

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*Abstract*—This study is a primer for formulating, analysing and simulating mathematical models for understanding the dynamics of COVID-19, the novel corona virus that emerged from Wuhan city in December 2019. A basic modeling framework, based on using a simple compartmental deterministic epidemic modeling a homogeneous population, is illustrated for gaining insight into the transmission dynamics of COVID-19 which is also developed to stochastic case. This simple model can be extended to include the population-level impact of a COVID-19 vaccine.

Keywords—COVID-19, mathematical modeling, transmission dynamics, simulation, vaccine.

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