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A mathematical model for influenza transmission of two strains in single host population

Influenza is a famous infectious disease worldwide. The disease is caused by influenza virus strains of type A, B and C. This virus attacks the bottom of the respiratory tract and one individual can be infected repeatedly with different strain types. Thus, in certain seasons, a population may be infected by two different types of viruses. In this study, the SIS (Susceptible-Infected-Susceptible) model was built to explain the transmission of influenza by two strains in one population. The dynamic analysis will be done on this model include the existence condition and coexistence of equilibrium point and stability of endemic. Parameter estimation is also done to obtain unknown parameter value and will be discussed sensitivity analysis to parameters that influence to basic reproduction ratio.

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