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STABILITY OF AN SVIS EPIDEMIC MODEL

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ABSTRACT

The spread of communicable diseases is often described mathematically by compartmental models and applied to control the epidemic. In this paper a nonlinear mathematical deterministic compartmental SVIS model for the dynamics of infectious disease including the role of a preventive vaccine is proposed and analyzed. The model has various kinds of parameter such as natural birth rate, natural death rate and dieses related death rate. Also incoming immigrants are considered in this model. A model for the transmission dynamics of an infectious disease has been presented and analyzed the stability of equilibrium points of this model.

KEYWORDS: Basic Reproduction Number, Diseases Free Equilibrium, Infectious Diseases, Stability Analysis