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EQUILIBRIUMS AND STABILITY OF AN SVIR EPIDEMIC MODEL

MD. SAIFUL ISLAM

Department of Computer Science and Engineering, Jatiya Kabi Kazi Nazrul Islam University, Trishal, Mymensingh, Bangladesh

ABSTRACT

An epidemic model is a simplified means of describing the transmission of communicable disease through individuals. Compartmental model is one of the easiest way to analyzed communicable diseases. In this paper a nonlinear mathematical deterministic compartmental SVIR 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: Endemic Equilibrium Basic Reproduction Number, Diseases Free Equilibrium, Infectious Diseases, Stability