

Optimal control strategy of Rotavirus Disease for a Discrete Time SIRSE Model

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In this paper, we examine the optimal control strategy of an SIRSE (Susceptible Infected Recovered - Susceptible - Environment) model with discrete time. With an objective to reduce the number of infected individuals and the associated cost involved. We analyze the conditions for optimality using the optimal control theory and Pontryagins maximum principle in discrete time. The numerical simulation is carried out using MATLAB, solving the fourth order Runge-Kutta Scheme. Results obtained confirm that multiple control strategies are more effective in the controlling of rotavirus disease.

Keywords: Discrete time; Optimal Control; Rotavirus; Pontryagins Maximum Principle.,