Invited Talk 4

Immuno-epidemic Modelling: Formulation and Major Outcomes

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A wide range of mathematical models is available to study the progression of various epidemic diseases. Variations in the period of infectivity, the time required for recovery, and the days spent in the hospital during severe stages of the disease can differ significantly from one patient to another due to differences in individual immunity levels. The main objective of this talk is to discuss a new modeling approach for epidemic diseases, which incorporates distributed recovery and death rates, as well as variable infectivity based on individual immunity levels. The rate of infectivity depends on the strength of the immune response and the antibody levels resulting from vaccination and acquired immunity. The proposed modeling approach can be applied a wide range of epidemic diseases.