

Control of Infectious Diseases through Media Awareness : A Mathematical Strategy

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Abstract

The study of Infectious diseases in Biomathematics is gaining attention nowadays. People of all over the world are now in a great danger because infectious diseases can emerge at any time. The situation during an outbreak period is quite unbearable. Anyone may become infected by a specific infectious disease and is able to spread the germs of that disease to others. It is known to all that vaccination can prevent the outbreak at a high rate but the people of developing countries like Bangladesh do not get proper treatment on right time due to the high transportation cost of vaccines. In that situation, media can play an advanced role by broadcasting valuable programs in order to make people conscious about the harmful effects of emerging infectious diseases. By this, people become aware and stay away from the contact of diseases. In this paper, a mathematical model has been formulated which shows the behaviors of infectious diseases and a control strategy about how to reduce the spread of such diseases by implementing media awareness. The model has been solved analytically and analytical results are verified with the numerical simulations. Our findings show that it will be more effective and efficient if various awareness programs are implemented during an infectious period until a proper vaccine or treatment reach in a certain community.

Keywords

Infectious disease, Mathematical model, Stability analysis, Media awareness