Analysis of the Seasonal Influenza Model in Actuarial Point of View

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Investigating the economic burden of the seasonal influenza is highly essential due to the large number of outbreaks in recent years. In this study, we only consider expenditure due to medical care. Classical SIS (susceptible, infected, susceptible) model is used to capture the dynamics of spread of influenza. Considering the potentiality of the movement from susceptible class to infected class and infected class to susceptible class, the dynamics model is constructed. Including insurance based computation and actuarial techniques average economic burden is computed by considering unit future medical care expenditure. Simulation is carried out to demonstrate the variation of the present economic burden with respect to contact rate. Seasonal variation can be captured via contact rate and the proposed model provides theoretical background to investigate the economic burden of seasonal influenza.

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