

Evaluation and Predictive Modeling on Epidemic Situation of SARS

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Abstract

The first SARS case found in Mainland of China was in Guanggong Province on Nov. 16, 2002. In a short time, SARS Epidemic harassed more than 20 countries and regions all over the world. Very fast, the influences of the spread of SARS on economic development had attracted many countries, regions and related international organizations' concerns. The assessment on the degree of the influence must be based on the research on the rule of SARS spread and the prediction on the end of SARS Epidemic.

During the prevalence of SARS , the number of patients infected was disparate in different areas because of the disparity in population density, population movement, public health condition and the actions against SARS. Accordingly, it is problematic if we directly use the data of new case added in one day, accumulative case, accumulative healed patients and the deaths to analyze and assess the epidemic process.

For reserving the problem above, we defined an indicator parameters system of SARS epidemic, which can reflect the common rule and properties of SARS epidemic well in different regions and can depict the whole process from breaking out to convergence exactly and successively. Base on this indicator parameters system, we can investigate the characteristic of SARS epidemical process in both Beijing and Hongkang. And the time when a region could be deleted from the touring warning list and epidemic areas list can be predicted. Furthermore, by adopting a simulation model the distribution estimation of Time in Hospital of SARS Patients has been estimated. Finally some basic principles and suggestions are provided base on the simulation results of SARS prevailing again in Beijing.