

Modeling and Simulation of Pandemic Influenza Outbreaks

David Goldsman

School of Industrial and Systems Engineering, Georgia Institute of Technology

sman@gatech.edu

Discrete-event simulation has become one of the most widely used methods for modeling the propagation of and mitigation strategies for pandemic diseases such as influenza. In this paper, we consider different approaches for simulating the progression of influenza through an at-risk population during a developing pandemic. We will also look at the effects of reactive strategies such as immunization, treatment with antiviral medicines, and social distancing methods including school closure. Finally, we discuss generalizations of our work to other diseases such as cholera and measles.