

Abstract Submitted  
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**Simultaneous influenza and respiratory syncytial virus infection in human respiratory tract** LUBNA JAHAN RASHID PINKY, HANA DOBROVOLNY, Texas Christian University — Studies have shown that simultaneous infection of the respiratory tract with at least two viruses is not uncommon in hospitalized patients, although it is not clear whether these infections are more or less severe than single infections. We use mathematical models to study the dynamics of simultaneous influenza (flu) and respiratory syncytial virus (RSV) infection, two of the more common respiratory viruses, in an effort to understand simultaneous infections. We examine the roles of initial viral inoculum, relative starting time, and cell regeneration on the severity of the infection. We also study the effect of antiviral treatment on the course of the infection. This study shows that, unless treated with antivirals, flu always takes over the infection no matter how small the initial dose and how delayed it starts with respect to RSV.

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