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Age-Structured SAIQR Model for Influenza Transmission Dynamics.

An integral-partial differential system for Influenza transmission dynamics is presented. Since a significant proportion of individuals is asymptomatic or experience mild infections, the model includes A (asymptomatic)-class. It is well known that when quarantine individuals are considered in the model, recurrent outbreaks of influenza happened. A complete analysis of the SAIQR model will be shown, including a specific expression for R_0 (The basic reproduction number). Existence of an endemic steady state as well as the local and global stability of the disease-free equilibrium were established. Numerical simulations were performed using age-dependent influenza parameter values. (Received September 13, 2016)