

Increased Disease Prevalence of Avian Influenza in Poultry Caused by Imperfect Vaccination

11/19/2013

Abstract

Vaccination of poultry is an important control measure for avian influenza employed in the countries where the disease is endemic. We have formulated a coupled ODE-PDE model of avian influenza in domestic birds with imperfect vaccination and age-since-vaccination structure, which includes distinct features of vaccine-induced partial protection. Interestingly, our results show that vaccination can paradoxically increase the total number of infected by way of inducing high levels of asymptomatic carriers of the virus. This "silent spread" of avian influenza has been documented in some poultry farms undergoing vaccination. In this talk, we focus on the mechanisms which can cause this silent spread of avian influenza